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Evaluation of the Cost Impact of 2024 ICC Prescriptive Code Changes

RINKER-CR-2024-111

Final Report

14 June 2024

Submitted to

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EXECUTIVE SUMMARY

The study examined the 2024 I-Codes changes (including: International Building Code (IBC); International Residential Code (IRC); International Mechanical Code; International Plumbing Code; International Fuel Gas Code; International Code for Existing Buildings; and National Electrical Code) and their cost impact on the 2021 I-Codes as incorporated in 2023 Florida Building Code (effective December 31, 2023).

The I-Codes 2024 changes that are prescriptive in nature and have the potential of changing the cost of construction were identified and used in a standard set of prototypes of two residential and five commercial/institutional building information models to determine the impact of these code changes on their construction costs. RS Means 2024 Cost data for the Orlando Region was used to price these prototype buildings. Model based quantities were used and verified along with some SF style estimates from RS Means for certain systems that were not fully defined in the prototype building models. Based on these construction cost estimates, it was determined that the relative increase in cost due to the 2024 I-Codes changes ranged from approximately 0.11% for the Retail Spaces prototype to approximately 0.85% for the Small Hotel building. The estimated relative change in cost for the residences was approximately 0.10% for the 1-story house to approximately 0.16% for the 2-story house. The average changes in cost were approximately 0.45% for the commercial/institutional buildings and approximately 0.13% for the residences.

Future research should focus on the use of the developed models and estimates to evaluate future code changes. In addition, workshop webinars should be promoted to introduce and encourage designers, builders and other code change petitioners to use the models to prospectively evaluate the cost impact of their proposed code changes. Finally, the design of the existing models should be updated and other types of buildings should also be explored to develop an even more diverse set of building models.

Overview

This research provides an assessment of the potential cost impacts of the 2024 I-Code changes to the 2021 International Building Codes as incorporated in 2023 Florida Building Code (effective December 31, 2023) by identifying those code changes/provisions that are prescriptive in nature and have the potential of adding cost to construction and by estimating the costs of the rest of the code changes using good engineering judgment and feedback from general contractors and consulting. A standard set of baseline residential and commercial building designs are modeled using building information modeling (BIM) and are used to produce cost estimates and extract the cost impact of code changes. Figure 1 shows the general process used to conduct this research.

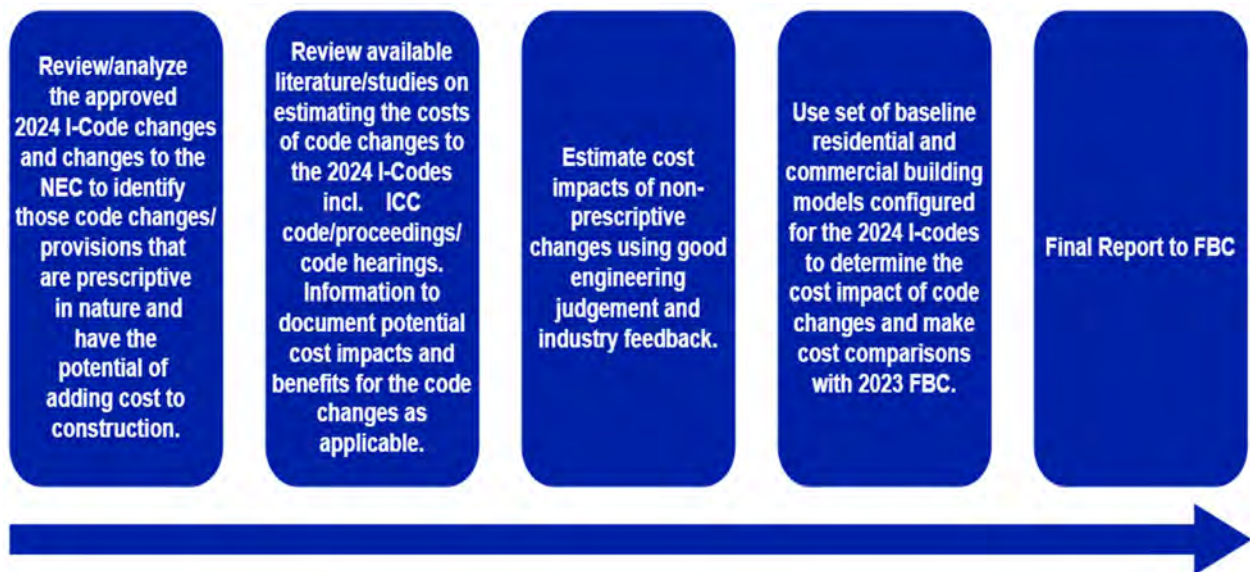


Figure 1. Research Plan

If any of the information gathered is seen as providing clear direction for one or more code recommendations, the recommendation(s) will also be written up and presented to the Commission. A preliminary report was submitted on 18 April 2024

Scope of Work

Task

- a. RS shall review/analyze the approved 2024 I-Code changes and changes to the NEC, as listed in Section 2, to identify those code changes/provisions that are prescriptive in nature and that have the potential of adding cost to construction.
- b. The listed consultants shall participate in this process to assist the research team with the specifics of the design changes and their cost impacts as follows:
 - o Koffel Associates shall conduct a review/analysis of non-structural fire protection and life safety requirements in IBC Chapter 3 through Chapter 10. This review shall be limited to applicable criteria affecting the five (5) different commercial building scenarios used for the 2024 I-Codes plus Florida Specific Changes (2020 FBC) (Reference – RINKER-CR-2016-101 Final Report). Koffel Associates shall also analyze means of egress and fire prevention for the one-story and two-story homes of the 2024 IRC. In addition, Koffel Associates shall provide the cost for the prescriptive code changes and their qualitative benefits.
 - o AEI shall have primary responsibility in evaluating the applicable mechanical, electrical, and plumbing (MEP) related changes that have occurred between the 2021 and 2024 I-Codes, as they relate to the seven building types: 1) Small elementary school; 2) Stand-alone retail building; 3) Small hotel; 4) Small office building; 5) High-rise apartment; 6) one-story house on slab foundation; 7) 2-story house on slab foundation.
 - o AEI shall also provide the cost for the prescriptive changes and their qualitative benefit.
- c. RS shall review available literature/studies on the subject of estimating the costs of the changes to the 2024 I-Codes including the International Code Council's code proceedings/code hearing transcripts. Information gathered from this task shall be used to document potential cost impacts and benefits for the code changes identified in Item 4(a) and as applicable.
 - o In addition to the ICC code proceedings/code hearing transcripts, cost databases such as RS's Means Cost Works, RS's Means Building Construction Cost Data, and AEI's and Koffel Associates' specific proprietary databases shall be used to estimate the potential cost impact of the applicable code changes.
- d. RS shall estimate the construction cost impacts of those provisions that are not covered under Section 2 using good engineering judgment and feedback from general

contractors and consulting engineers. The listed consultants shall assist the research team with the cost estimates for these changes.

- e. RS shall use the set of baseline residential and commercial building designs configured for the 2021 I-codes to determine the cost impact of code changes. RS shall configure these buildings using the buildings listed below which were used to estimate the cost impacts of the 2024 I-Code changes and Florida-specific amendments to the Florida Building Code, 8th Edition, (2023):
 - o For the purposes of this study the seven buildings include five commercial buildings: 1) Small elementary school; 2) Stand-alone retail building; 3) Small hotel; 4) Small office building; 5) High-rise apartment 6) one-story house on slab foundation; (7) 2 story house on slab foundation.
- f. RS shall use building information modeling (BIM) tools developed for the 2018 I-Codes (as amended via the Florida Building Code, 7th Edition (2020) and 8th Edition 2024 I-Codes) to produce:
 - o A schedule of material quantities (exported to MS Excel).
 - o Architectural 3D view and walk-through.
 - o Isolated structural 3D view and walk-through.
 - o Isolated mechanical, electrical, and plumbing (MEP)/mechanical, electrical, plumbing, and fire (MEPF) 3D view and walk-through.
- g. RS shall use the information developed by Item 4(f) and cost databases to produce cost estimates and extract cost impact of changes on the reference houses and commercial buildings. Sources of cost data shall include RS Means Cost Data, distributors' or big box retailers' websites, and building contractors. Cost estimates of the code changes that do not directly apply to the selected reference houses shall be listed separately and shall be added or subtracted from the aggregated costs for these reference houses.

MEP Code Changes Cost Impact

Affiliated Engineers SE Inc. (AEI) has undertaken a study aimed at evaluating the cost impact that will result from the state of Florida's adoption of the 2024 Edition of the I-Codes. AEI's primary responsibility resided in evaluating the applicable MEP related changes that have occurred between the 2021 Edition and the 2024 Edition of the I-Codes and their cost impact and benefit.

Mechanical and Plumbing Changes Cost Impact

Findings

1. Of the 2024 I-Codes reviewed with respect to mechanical, fuel gas, and plumbing systems, a significant proportion of code changes across all I-Codes offer revised language for clarity and consistency.
2. The IMC featured several code changes whereby product standards tables have been updated to reflect the most current. Code changes where cost implications are expected include updates to ventilation and exhaust rates.
3. Cost impacts documented for proposed changes to the plumbing code included plumbing protection in expansive soil, tracer wire for plastic sewer piping, and locations for full open valves.
4. Cost impacts documented for proposed changes to the fuel gas code included the use of non-metallic pipe supports, and an updated UL standard for factory-built commercial incinerators.

The supporting appendices Tables _____ provide further detail and elaboration on the above-listed key observations.

NEC Changes Cost Impact

A review of the changes to the 2023 National Electric Code (NEC) was completed by examining each change and the corresponding committee notes. Where the changes were deemed to have a cost impact on construction a value was determined by considering the change between the 2023 and 2020 code versions. Material price differentials were based on retail prices and the wages were based on the prevailing wage reports of the U.S. Department of Labor.

Findings

Many of the changes to the code were due to editorial changes to improve readability and style consistency. Many others were made so that the NEC rules align with other codes and standards. Some of the changes impacted large portions of the code. These include:

- Changes were made to allow 10 Amp rated circuits for loads such as LED lighting and alarm panels. The proposed change to allow #16 AWG copper and #14 copper clad aluminum conductors on 10 Amp circuits was rejected as further testing needs to be completed.
- GFCI coverage was expanded to cover additional appliances such as electric ranges and clothes dryers.
- Ground Fault Protection of Equipment (GFPE) was expanded in areas such as marinas.
- Surge protective devices (SPD) use has been expanded to require installation in or adjacent to the panel containing the branch circuit. SPDs coverage extended to emergency equipment.
- Cybersecurity is addressed. Emergency/Legally required power systems and Critical Operations Power Systems (COPS) that are connected to a

communication network require a cybersecurity assessment to be updated at intervals not to exceed five years.

Eight new articles were introduced to adjust to current trends. Although these will help to improve safety, a cost assessment was difficult to ascertain.

- 245 - Overcurrent Protection for Systems Rated Over 1000 Volts ac, 1500 Volts dc
 - Consolidates content from articles 240 and 490 into one article.
- 369 - Insulated Bus Pipe (IBP)/Tubular Covered Conductors (TCC) Systems
 - Recognizes a wiring system used in utility and shipboard applications.
- 371 - Flexible Bus Systems
 - Recognizes a flexible duct system used in machines, vehicles, and other instances requiring flexibility.
- 495 - Equipment Over 1000 Volts ac, 1500 Volts dc, Nominal
 - Replaces article 490. Some of 490's content was relocated to new article 245.
- 512 - Cannabis Oil Equipment and Cannabis Oil Systems Using Flammable Materials
 - Addresses cannabis oil equipment and systems that use flammable materials during the plant oil extraction process.
- 722 - Cables for Power-Limited Circuits and Fault-Managed Power Circuits
 - The new Article 722 combines cable requirements for Class 2 and Class 3 cables, as well as introduces a new cable classification called Class 4. This unification streamlines information across multiple articles, making it easier for users to find the relevant details.
- 724 - Class 1 Power-Limited Circuits and Class 1 Power-Limited Remote-Control and Signaling Circuits
 - Relocated content from article 725 as part of the reorganization of the class 1-4 wiring methods.
- 726 - Class 4 Fault-Managed Power Systems
 - Introduces Class 4 Fault-Managed Power Systems. These systems are also known as packet energy transfer (PET), Digital Electricity (DE), Pulsed Power, and Smart Transfer Systems.

Two articles were deleted as a result of reorganization and removal of antiquated systems.

- 510 - Hazardous (Classified) Locations - Specific
 - Necessary parts were relocated to articles 511-516
- 720 - Circuits and Equipment Operating at Less Than 50 Volts
 - Deletes an article that covered generators that were phased out in the 1930s.

Table 8 (APPENDIX H) provides further detail and elaboration on the cost impact observations.

International Building Code (IBC-FPC) Changes Cost Impact

Koffel Associates, Inc. has undertaken a study aimed at evaluating the cost impact that will result from the state of Florida's adoption of the 2024 Edition of the International Building Code (IBC).

Findings

Note many Group I-2 code requirements have been added to more closely match the Centers for Medicare and Medicaid (CMS) requirements, and are not considered added cost as these occupancies already were required to meet the most stringent requirements of IBC and NFPA 101. A significant proportion of code changes across all I-Codes offer revised language for clarity and consistency, such as changing sprinkler to "automatic sprinkler system" throughout. This list of major changes does not include the associated definition changes that occurred for consistency in the code:

1. Type 1B flammable liquids have been redefined into two categories with separate requirements; High BV (burning velocity) and Low BV
2. Buildings or structures containing materials with deflagration hazard, including Category 1A flammable gases, and now only Category 1B flammable gases with burning velocity greater than 3.9 in/s (High BV) are considered a Group H-2 occupancy.
3. Buildings or structures containing materials that readily support combustion or pose a physical hazard, now including only Category 1B flammable gases with burning velocity of 3.9 in/s or less (Low BV) are considered a Group H-3 occupancy.
4. Permissions for exceeding maximum allowable quantity without classifying the building/occupancy as Group H are now applicable to Category 1B (low BV) flammable gas that are stored and displayed per IFC requirements.
5. Lithium-ion and Lithium metal batteries were provided with guidance based on uses including research, manufacturing, and storage
6. Lithium-ion or lithium metal battery testing, research and development is considered a Group B occupancy. Additional requirements for sprinkler/ fire alarm are provided for these uses.
7. Energy storage systems and equipment containing lithium-ion or lithium metal batteries are considered a Group F-1 occupancy. Additional requirements for sprinkler/ fire alarm are provided for these uses.
8. Facilities that manufacture vehicles powered by lithium-ion or lithium metal batteries are considered a Group F-1 occupancy. Additional requirements for sprinkler/ fire alarm are provided for these uses.
9. Storage of lithium-ion or lithium metal batteries, as well as vehicle repair garages for vehicles powered by lithium-ion or lithium metal batteries are considered a Group S-1 occupancy. Additional requirements for sprinkler/ fire alarm are provided for these uses.
10. Automatic sprinkler systems are required in room or space for storage of lithium-ion or lithium metal batteries in Group M facilities.

11. High-rise building stair communication systems and two-way communication systems are now to be UL listed and installed in accordance with NFPA 72
12. Stages, Platforms, and technical production areas no longer require standpipe systems unless otherwise required by other sections of IBC.
13. Notes added to Division 1.4 Explosives to provide consistent code guidance with IFC for consumer fireworks.
14. Storm Shelters for critical emergency operations provided with new requirements for occupant capacity and location.
15. Puzzle Room requirements were added to provide more consistent code guidance.
16. Mixed-use and occupancy fire protection requirements section changed to distinguish between IRC and IBC constructed live/work units.
17. Thermal barrier requirements provided with updated exceptions for topside of mass timber floors.
18. Allowable percentage of unprotected portions of mass timber ceiling and walls increased.
19. Allowable percentage of unprotected portions of mass timber ceiling and walls now specify mass timber walls and ceilings are limited to a percentage of the floor area in any dwelling unit "within a story" or fire area "within a story."
20. Fire wall required fire resistance rating guidance and clarification.
21. Continuity of exterior wall rating guidance and clarification.
22. Exception added addressing lay-in ceilings systems in Group I-2 occupancies are permitted in lieu of smoke partitions extending from floor slab below to floor slab, roof, or sheathing above.
23. Additional allowances for penetrations in concrete floor assemblies to not require a firestop or insulation system.
24. Allowance for ducts in I-2 and I-3 occupancies to penetrate up to 3 floors without a fire damper. Criteria provided to meet the allowance.
25. Changes in minimum density for insulation providing 15-minute fire rating.
26. One and two-family dwellings no longer require exterior waterflow alarms.
27. Re-instated requirement for Class 1 standpipe hose connections at exterior stairways.
28. Group A-5 exception added to omit voice alarm communication and fire alarms systems where criteria is met.
29. Fire alarm system that activates occupant notification system required in Group S public and self-storage occupancies 3 stories or more for interior corridors and common areas.
30. Smoke control systems requirements adjusted to maintain consistency with NFPA 92.
31. Activation of elevator pressurization system is no longer required to activate upon the building fire alarm system.
32. New requirements and section restructure to provide guidance on Carbon Monoxide Detection.
33. Group E occupancies with more than 500 people occupant load require a risk analysis in accordance with NFPA 72 to determine the need for mass notification.
34. New elevator lobby locking provisions for exit access doors.

35. Clarifications to stairway and handrail requirements for accessible and type A dwelling units for consistency with ADA and ABA standards.
36. Exception added stating low-level exit signs are not required in Group R-1 occupancies equipped throughout with automatic sprinkler system.
37. Increased allowance for 300 ft maximum exit access travel distance in fabrication areas of Group H-5 occupancies where conditions of the section are met.
38. Clarification on allowable structural element penetrations and ratings in interior exit stairway construction and exit passageways.

For the IBC changes that reference other ICC codes or NFPA 1, 70, or 101, a cursory review of the respective ICC Code, or the aforementioned NFPA Code or Standard section that is referenced by the IBC change was reviewed for the degree to which it affects the cost impact to the five buildings considered as part of this study. Such referenced Code and Standard changes imposing a significant cost impact are included in summary Table 9 (APPENDIX I).

Structural Code Changes Cost Impact

The RS has undertaken a study aimed at evaluating the cost impact that will result from the state of Florida's adoption of the 2024 Edition of the International Building Code (IBC) and the International Residential Code (IRC). The RS took primary responsibility in evaluating the applicable Structural Engineering related changes that have occurred between the 2021 Edition and the 2024 Edition of the IBC and IRC.

Findings

Many of the changes to the code were editorial changes to improve readability and style consistency. There were very few prescriptive cost impact changes and many of these were related to seismic requirements. ASCE 7-22 wind speed boundary changes resulted in cost increases along the hurricane coastline, while in the Gulf Coast area of the Florida Panhandle higher design wind speeds are required.

Tables 10-11 (Appendix J - K) provide further detail and elaboration on the above-listed key observations.

Building Information Models and Associated Cost Impacts

A comparison of the cost impact of changing from the 2023 FBC to 2024 I-Codes is shown in Table 1. The cost impact of the 2024 ICC code changes ranged from approximately 0.84% for the Small Hotel to approximately 0.10% for the 1-story residence building with an average of 0.45% for the commercial/institutional buildings and an average of 0.13% for the residences.

Each building type is discussed, and the changes modeled are listed in the subsequent subsections based on Levels 1 and 2 of the ASTM Unifomat II Standard E1557 associated with each building type (See Figure 3). The ASTM E1557 standard provides a common structure linking the building program, specifications, and estimates.

Table 1. Summary I-Codes and NEC Changes Cost Impact Comparison

Building Type	Estimated 2024 Cost Under 2023 FBC	Estimated 2024 Cost Under 2024 I-Codes	Anticipated Cost Change
1 <i>Small Office</i>	\$ 14,640,696	\$ 14,697,339	0.39%
2 <i>Retail Spaces</i>	\$ 28,543,941	\$ 28,575,923	0.11%
3 <i>Primary School</i>	\$ 13,406,124	\$ 13,442,365	0.27%
4 <i>Small Hotel</i>	\$ 11,627,667	\$ 11,726,617	0.84%
5 <i>Mid-Rise Apartment</i>	\$ 65,296,987	\$ 65,708,512	0.63%
6 <i>1-Story Residence</i>	\$ 435,506	\$ 435,956	0.10%
7 <i>2-Story Residence</i>	\$ 639,780	\$ 640,830	0.16%
Average Net % Change in Cost Estimate (comm./inst. bldgs.):			0.45%

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements
A. SUBSTRUCTURE	A10 Foundations	A1010 Standard Foundations A1020 Special Foundations A1030 Slab on Grade
	A20 Basement Construction	A2010 Basement Excavation A2020 Basement Walls
B. SHELL	B10 Superstructure	B1010 Floor Construction B1020 Roof Construction
	B20 Exterior Closure	B2010 Exterior Walls B2020 Exterior Windows Exterior Doors
	B30 Roofing	B3010 Roof Coverings B3020 Roof Openings
C. INTERIORS	C10 Interior Construction	C1010 Partitions C1020 Interior Doors C1030 Specialties
	C20 Staircases	C2010 Stair Construction C2020 Stair Finishes
	C30 Interior Finishes	C3010 Wall Finishes C3020 Floor Finishes C3030 Ceiling Finishes
D. SERVICES	D10 Conveying Systems	D1010 Elevators D1020 Escalators & Moving Walks D1030 Material Handling Systems
	D20 Plumbing	D2010 Plumbing Fixtures D2020 Domestic Water Distribution D2030 Sanitary Waste D2040 Rain Water Drainage D2050 Special Plumbing Systems
	D30 HVAC	D3010 Energy Supply D3020 Heat Generating Systems D3030 Cooling Generating Systems D3040 Distribution Systems D3050 Terminal & Package Units D3060 Controls & Instrumentation D3070 Special HVAC Systems & Equipment D3080 Systems Testing & Balancing
	D40 Fire Protection	D4010 Fire Protection Sprinkler Systems D4020 Stand-Pipe & Hose Systems D4030 Fire Protection Specialties D4040 Special Electrical Systems
	D50 Electrical	D5010 Electrical Service & Distribution D5020 Lighting & Branch Wiring D5030 Communication & Security Systems D5040 Special Electrical Systems
E. EQUIPMENT & FURNISHINGS	E10 Equipment	E1010 Commercial Equipment E1020 Institutional Equipment E1030 Vehicular Equipment E1040 Other Equipment
	E20 Furnishings	E2010 Fixed Furnishings E2020 Movable Furnishings
F. SPECIAL CONSTRUCTION & DEMOLITION	F10 Special Construction	F1010 Special Structures F1020 Integrated Construction F1030 Special Construction Systems F1040 Special Facilities F1050 Special Controls & Instrumentation
	F20 Selective Building Demolition	F2010 Building Elements Demolition F2020 Hazardous Components Abatement

Figure 3. ASTM UNIFORMAT II Classification of Building Elements (E 1557)

Small Office Building

The design for the permitted drawings for this 7-story office building were for the shell only, and the interior floor build outs were left for future tenants. In this regard, additional costs implications may be realized once the building is designed to completion by tenants. The 2024 ICC changes were evaluated based solely on the approved shell and infrastructure drawings. The small office building model is shown in Figures A-1 through A-3.

The 2024 ICC changes mostly impacted the HVAC category due to the introduction of new manufacturing standards for the condensing unit and heat pump, (M2-21 and M4-21), leading to increased costs. Additionally, the electrical category saw cost escalations due to a series of updates: implementation of a new circuit identification system (FR8583) for improved traceability of electrical sources; incorporation of surge protection measures (FR7689) to safeguard advanced electronics and safety equipment; inclusion of mandatory standby power systems (FR8881); and integration of a stairway communication system, compliant with UL2525 and NFPA 72 standards (G59-21).

Table A. Small Office Estimated Cost Summary¹

<i>ASTM Uniformat II Levels</i>	<i>2023 FBC Costs</i>	<i>2024 I-Codes Costs</i>
1 Substructure	536,672	536,672
<i>A10 - Foundations</i>	536,672	536,672
<i>A20 - Basement Construction</i>	-	-
2 Shell	6,631,185	6,631,185
<i>B10 - Superstructure</i>	4,044,646	4,044,646
<i>B20 - Exterior Enclosure</i>	2,541,159	2,541,159
<i>B30 - Roofing</i>	45,380	45,380
3 Interiors	1,132,713	1,132,713
<i>C10 - Interior Construction</i>	426,707	426,707
<i>C20 - Stairs</i>	125,039	125,039
<i>C30 - Interior Finishes</i>	580,966	580,966
4 Services	6,340,127	6,340,127
<i>D10 - Conveying</i>	854,177	854,177
<i>D20 - Plumbing</i>	350,798	350,798
<i>D30 - HVAC</i>	513,847	530,289
<i>D40 - Fire Protection</i>	1,096,740	1,096,740
<i>D50 - Electrical</i>	3,524,564	3,564,764
5 Equipment & Furnishings	-	-
6 Special Construction	-	-
7 Building Sitework	-	-
Total Cost:	\$14,640,696	\$14,697,339
	<i>% Change from Previous:</i>	0.39%

¹All costs based on 2024 RS Means Central Florida Costs.

Small Office:

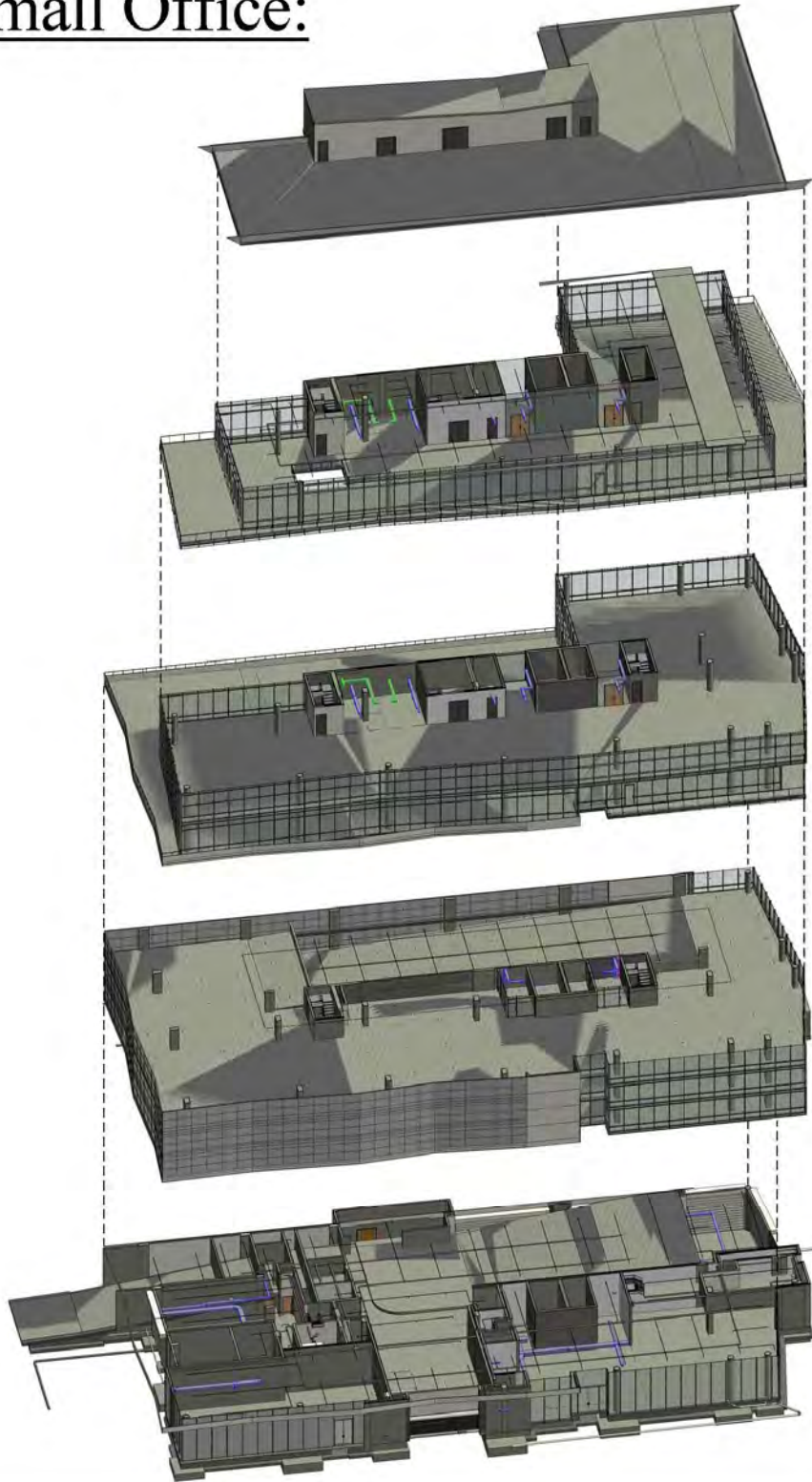


Figure A-1. 3D sections of Small Office Building

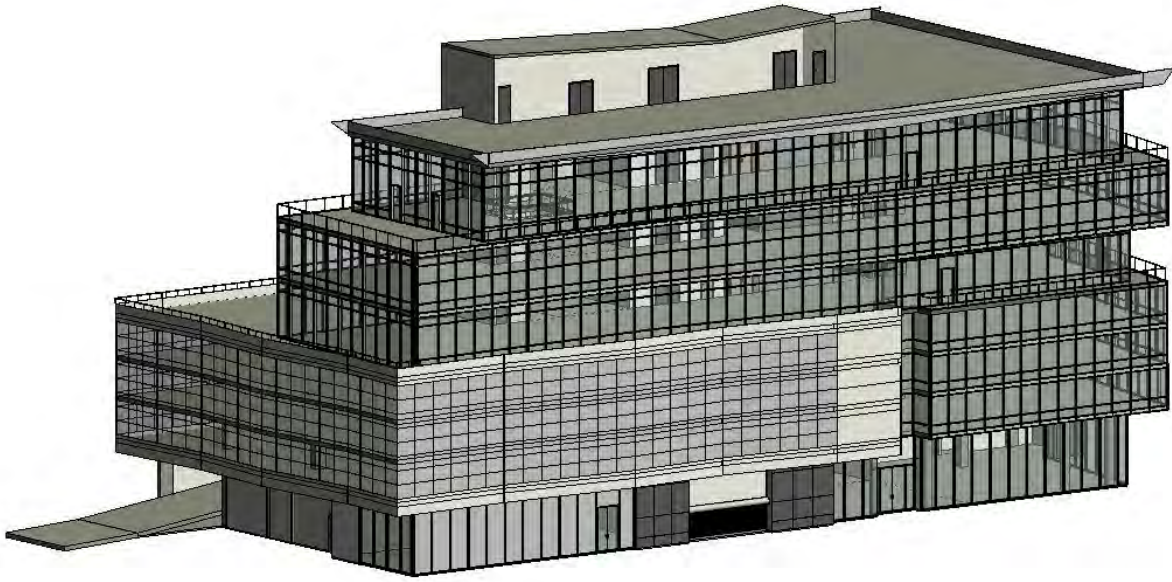


Figure A-2. 3D Model of Small Office Building

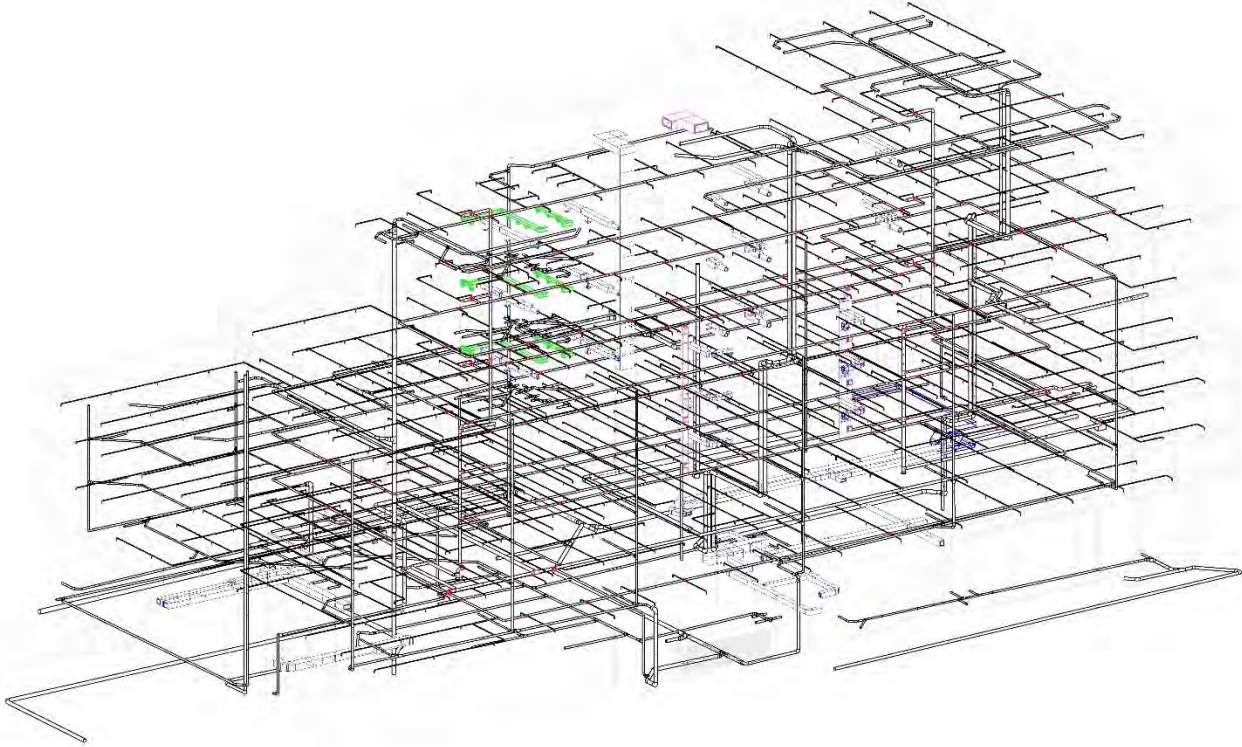


Figure A-3. 3D Model of MEP systems for Small Office Building

Retail Spaces

Typical retail spaces are shown in Figures B-1 through B-3. The retail spaces modeled and utilized to develop this estimate have a parking structure on the lower level with large open areas above, from which the retail spaces can be accessed. It is an “open-air” style retail plaza and the retail spaces themselves are to be built out by the tenants. Due to this, major utility connections were made available in the approved drawings but there were limited MEP finishes as it was assumed that the tenants would complete this work and get it approved separately. The 2024 I-Codes changes were applied to the drawing set for the main retail space and the tenant built-outs were not evaluated. The electrical, fire protection, HVAC and equipment and furnishings all showed an increase in cost.

A major contributor to the cost increase was the change in electrical for surge protection (FR7689), standby power systems (FR 8881), and stairway communication system (G59-21). These changes added extra surge protection for electronic equipment, and added a two-way communication system for stairways that provides communication between each required location and the fire command center. Another contributor to the cost increase was adding adult changing stations (E142-21), as well as changes in refrigeration (M2-21) and heat pumps (M4-21).

Table B. Retail Spaces Estimated Cost Summary¹

<i>ASTM Uniformat II Levels</i>	2023 FBC Costs	2024 I-Codes Costs
1 Substructure	3,744,617	3,744,617
<i>A10 -Foundations</i>	3,744,617	3,744,617
<i>A20 -Basement</i>	-	-
2 Shell	14,174,869	14,174,869
<i>B10 -Superstructure</i>	11,432,983	11,432,983 0
<i>B20 -Ext. Enclosure</i>	2,656,602	2,656,602
<i>B30 - Roofing</i>	85,284	85,284
3 Interiors	1,737,284	1,737,284
<i>C10 - Int. Construction</i>	600,671	600,671
<i>C20 - Stairs</i>	392,980	392,980
<i>C30 – Int. Finishes</i>	743,543	743,543
4 Services	8,887,171	8,908,653
<i>D10 - Conveying</i>	753,618	753,618
<i>D20 - Plumbing</i>	1,383,084	1,383,084
<i>D30 - HVAC</i>	1,500,436	1,506,942
<i>D40 - Fire Protection</i>	3,251,856	3,252,056
<i>D50 - Electrical</i>	1,998,178	2,012,952
5 Equip. & Furnishings	-	10,500
6 Special Construction	-	-
7 Building Sitework	-	-
Total Cost	\$28,543,941	\$28,575,923
	<i>Change from Previous:</i>	0.11%

¹All costs based on 2024 RS Means Central Florida Costs.

Retail:

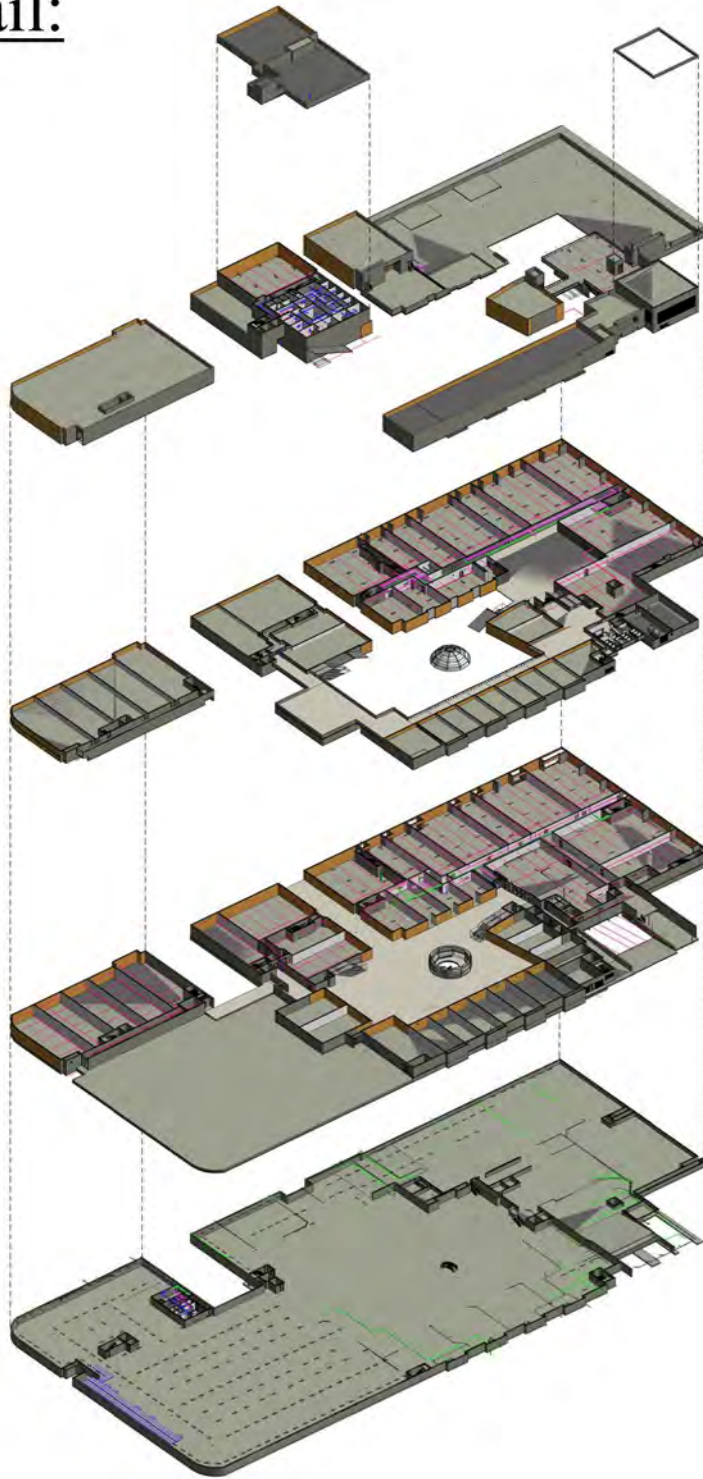


Figure B-1. 3D sections of Retail Space

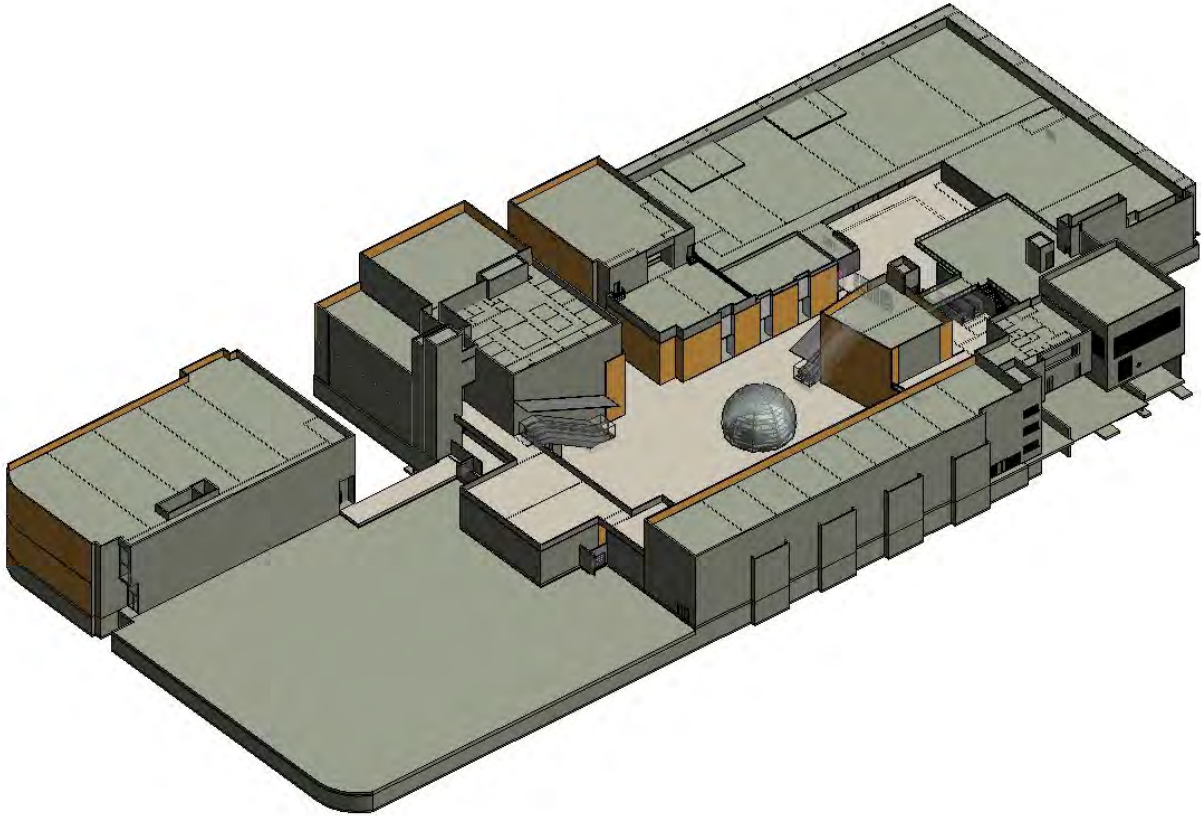


Figure B-2. 3D model of Retail Spaces

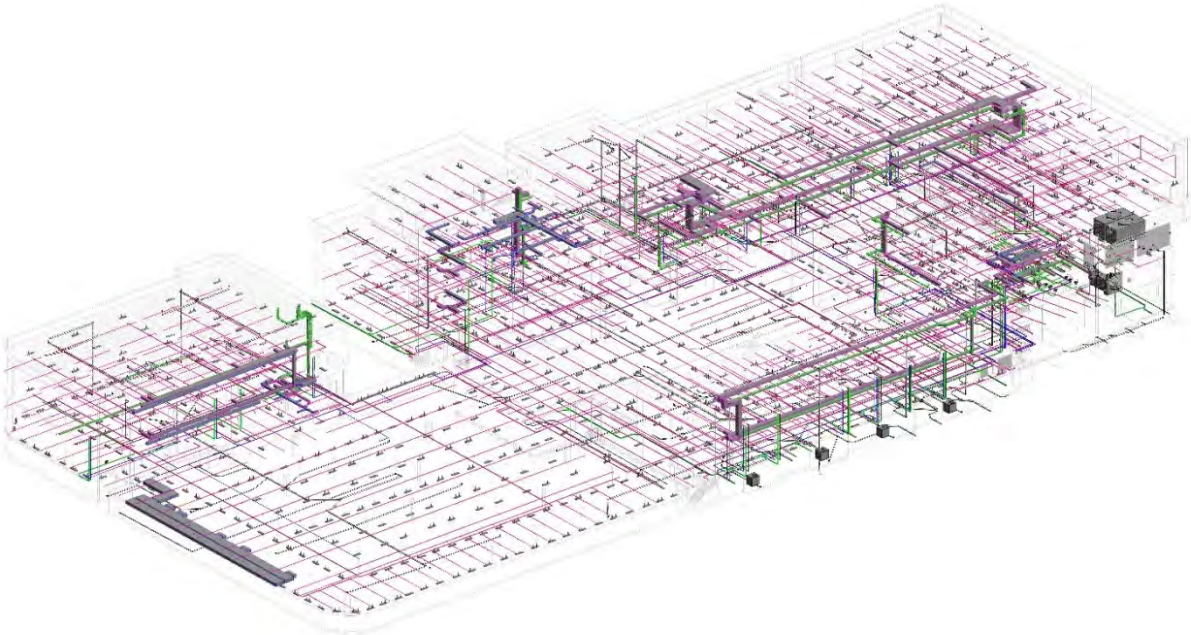


Figure B-3. 3D Model of MEP systems for Retail Spaces

Elementary School

As shown in Figures C-1 through C-3, the elementary school building has two levels in the classroom areas and one level near the cafeteria and auditorium spaces. The building is a public school with largely standard materials and was designed with performance and longevity in mind. The 2024 ICC changes mostly impacted the Services level of the prepared cost estimate.

The HVAC category due to the introduction of new manufacturing standards for the condensing unit and heat pump, (M2-21 and M4-21), leading to increased costs. Additionally, the electrical category saw cost escalations due to a series of updates: the implementation of a new circuit identification system (FR8583) for improved traceability of electrical sources; the incorporation of surge protection measures (FR7689) to safeguard advanced electronics and safety equipment; the inclusion of mandatory standby power systems (FR8881); and the integration of a stairway communication system, compliant with UL2525 and NFPA 72 standards (G59-21).

Table C. Elementary School Estimated Cost Summary¹

<i>ASTM Uniformat II Levels</i>	2023 FBC Costs	2024 I-Codes Costs
1 Substructure	1,214,557	1,214,557
<i>A10 -Foundations</i>	1,214,557	1,214,557
<i>A20 -Basement</i>	-	-
2 Shell	5,383,166	5,383,166
<i>B10 -Superstructure</i>	1,877,633	1,877,633
<i>B20 -Ext. Enclosure</i>	1,613,247	1,613,247
<i>B30 - Roofing</i>	1,892,286	1,892,286
3 Interiors	2,284,541	2,284,541
<i>C10 - Int. Construction</i>	901,169	901,169
<i>C20 - Stairs</i>	72,204	72,204
<i>C30 – Int. Finishes</i>	1,311,168	1,311,168
4 Services	4,523,860	4,560,101
<i>D10 - Conveying</i>	116,744	116,744
<i>D20 - Plumbing</i>	1,337,964	1,337,964
<i>D30 - HVAC</i>	1,524,753	1,534,544
<i>D40 - Fire Protection</i>	333,838	333,838
<i>D50 - Electrical</i>	1,210,561	1,237,011
5 Equip. & Furnishings	-	-
6 Special Construction	-	-
7 Building Sitework	-	-
Total Cost	\$13,406,124	\$13,442,365
	<i>Change from Previous</i>	0.27%

¹All costs based on 2024 RS Means Central Florida Costs.

Elementary School:



Figure C-1. 3D sections of Elementary School

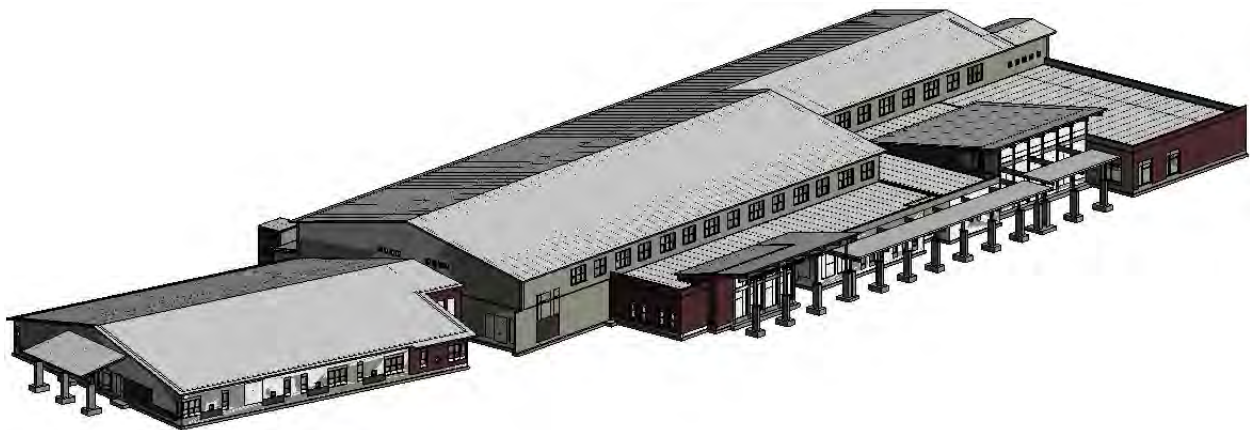


Figure C-2. 3D model of Elementary School

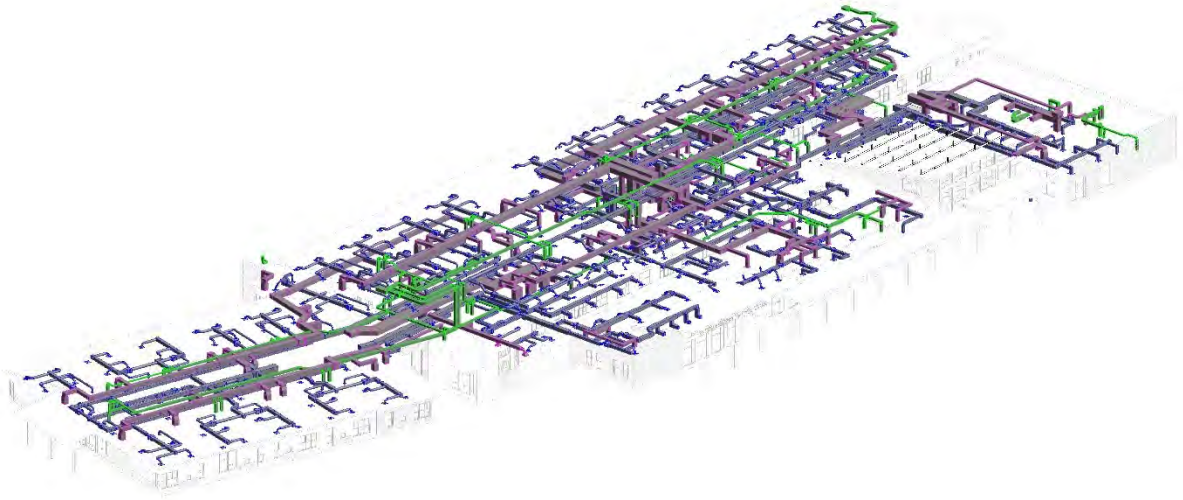


Figure C-3. 3D model of MEP systems for Elementary School

Small Hotel

As shown in Figures D-1 through D-3, the hotel modeled for this estimate is a 3-story building with 128 hotel rooms, a full-service kitchen and lobby area with standard hotel amenities. Each room has its own dedicated package HVAC unit and exhaust system. Both the exterior enclosure and interior partitions are primarily CMU structure walls with stucco or gypsum finish respectively. The 2024 ICC changes mostly impacted the Services level of the prepared cost estimate. The HVAC, fire protection and electrical systems all showed an increase in cost.

One source of the cost increase from the 2024 I-Codes changes was due to the HVAC changes M2-21 and M4-21 which requires more stringent specifications for factory-made condensing units and heat pumps. Additional cost increases were determined due to the 2024 IBC E142-21 change, which requires adult changing tables in public restrooms. Furthermore, changes to the 2024 NEC require additional GFCI coverage for appliances such as electric ranges and clothes dryers (FR8865). SPD coverage has also been expanded to require installation in the panel containing the branch circuit and has been extended to emergency equipment or sleeping rooms in hotels (FR7739). Change FR7706 requires power disconnect for first responders entering dwelling units. Moreover, change FR8583 requires high rise multifamily and commercial buildings to indicate the location of circuit sources and change FR8881 requires a limitation to selective coordination where electrical systems are installed.

Table D. Small Hotel Estimated Cost Summary¹

<i>ASTM Uniformat II Levels</i>	2023 FBC Costs	2024 I-Codes Costs
1 Substructure	448,846	448,846
<i>A10 -Foundations</i>	448,846	448,846
<i>A20 -Basement</i>	-	-
2 Shell	2,558,145	2,558,145
<i>B10 -Superstructure</i>	1,483,442	1,483,442
<i>B20 -Ext. Enclosure</i>	982,670	982,670
<i>B30 - Roofing</i>	92,033	92,033
3 Interiors	1,877,655	1,877,655
<i>C10 - Int. Construction</i>	1,071,729	1,071,729
<i>C20 - Stairs</i>	57,736	57,736
<i>C30 – Int. Finishes</i>	748,190	748,190
4 Services	6,725,022	6,816,972
<i>D10 - Conveying</i>	154,862	154,862
<i>D20 - Plumbing</i>	818,022	818,022
<i>D30 - HVAC</i>	2,188,180	2,188,180
<i>D40 - Fire Protection</i>	1,523,367	1,523,367
<i>D50 - Electrical</i>	2,040,591	2,132,541
5 Equip. & Furnishings	18,000	25,000
6 Special Construction	-	-
7 Building Sitework	-	-
Total Cost	\$11,627,667	\$11,726,617
	<i>Change from Previous</i>	0.85%

¹All costs based on 2024 RS Means Central Florida Costs.

Small Hotel:

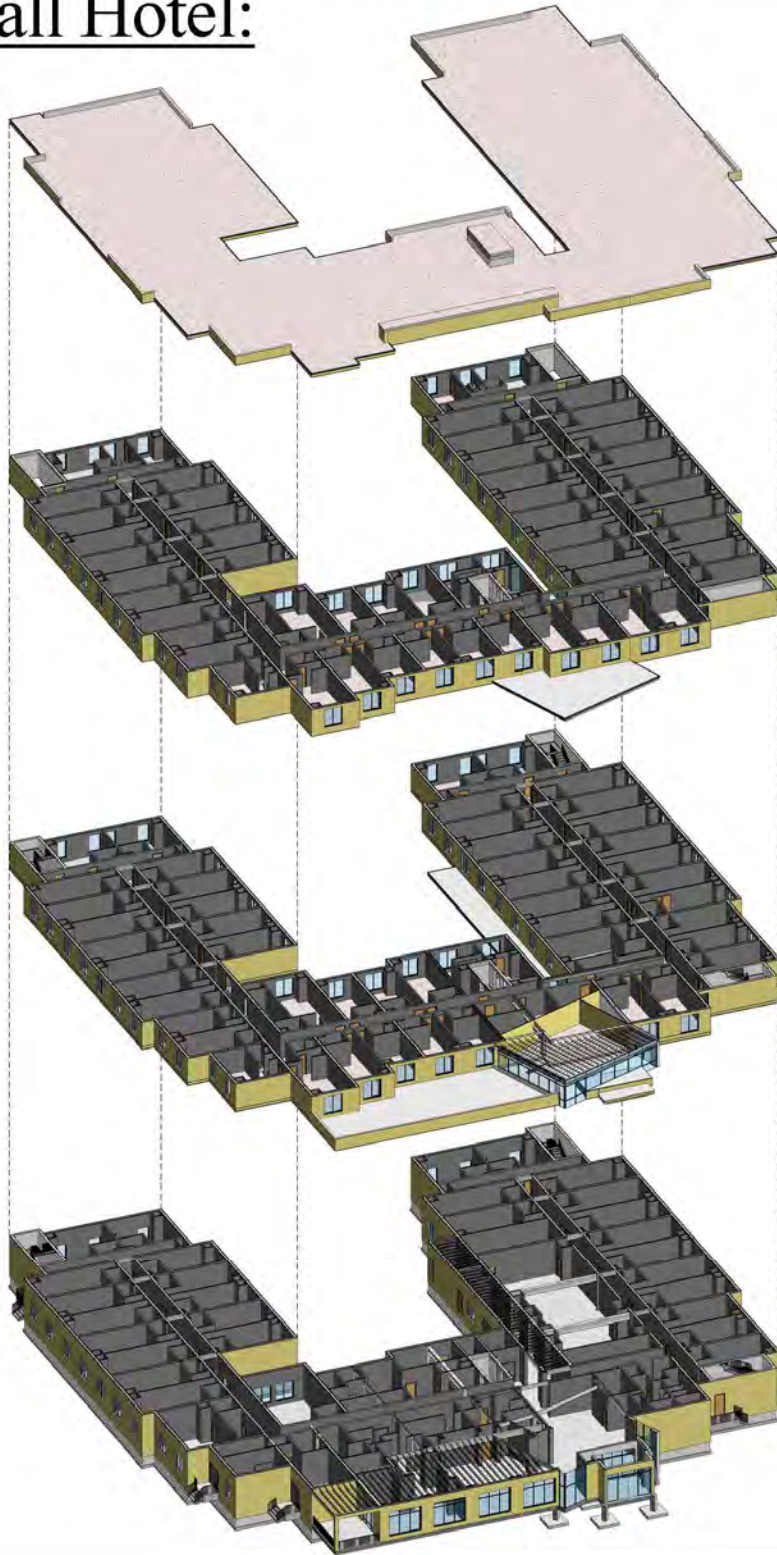


Figure D-1. 3D sections of Small Hotel

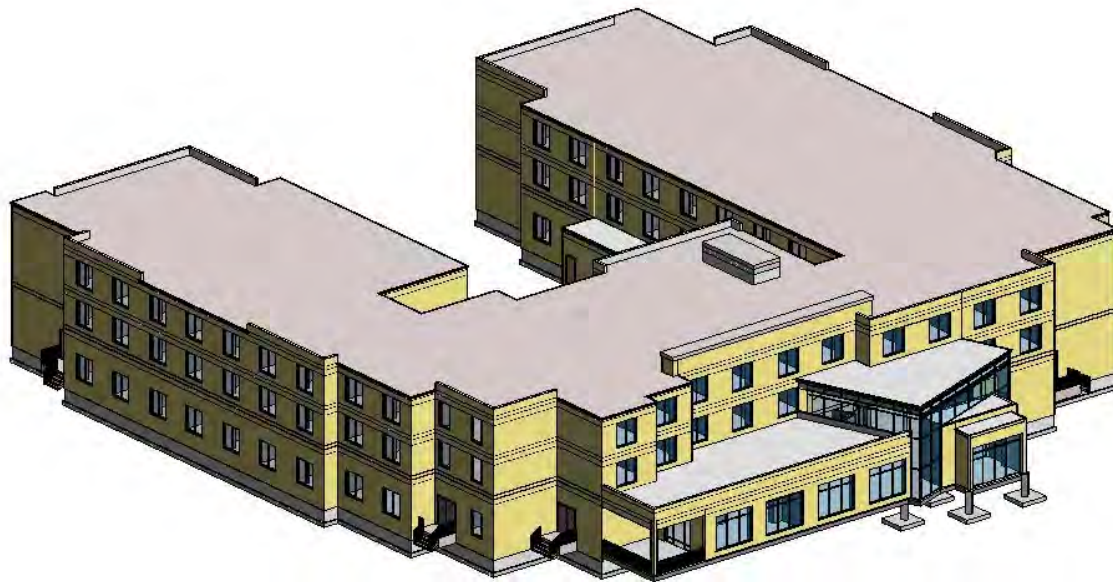


Figure D-2. 3D model of Small Hotel

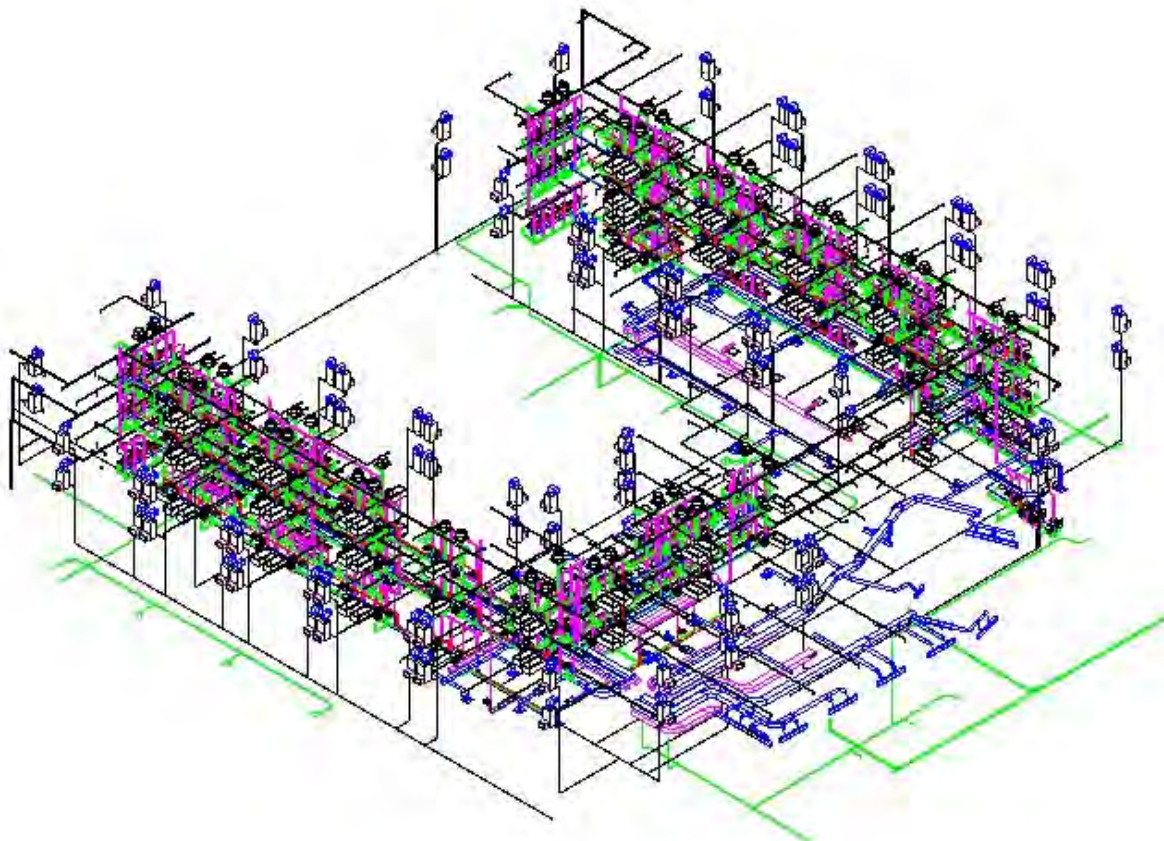


Figure D-2. 3D model of MEP systems for Small Hotel

Mid-Rise Apartment Building

As shown in Figures E-1 through E-3, the midrise apartment building has a 20-level residential tower and an attached 7-level parking structure. It is a concrete structure building with a largely curtain wall façade system. The residential tower reaches an overall height of 209' with the highest occupied level at 197'10". The 2024 ICC changes impacted the midrise apartment building at the Services level of the prepared estimate. The 2024 ICC changes were applied to the drawing set for the main retail space and the tenant built outs were not evaluated. The HVAC, fire protection and electrical systems all showed an increase in cost.

One contributor to the cost increase found in the 2024 I-Codes changes was due to the HVAC changes M2-21 and M4-21 which requires more stringent specifications for factory-made condensing units and heat pumps. Additionally, the IBC G59-21 change requires stairway communication systems in buildings 5 stories or more. Changes to the 2024 National Electric code require additional GFCI for appliances (FR8865) and for safety devices and equipment used in dwellings (FR7689). Furthermore, change FR7706 requires power disconnect for first responders entering dwelling units. Moreover, change FR8583 requires high rise multifamily and commercial buildings to indicate the location of circuit sources and change FR8881 requires a limitation to selective coordination where electrical systems are installed.

Table E. Mid-Rise Apartment Building Estimated Cost Summary¹

<i>ASTM Uniformat II Levels</i>	2023 FBC Costs	2024 I-Codes Costs
1 Substructure	2,325,198	2,325,198
<i>A10 -Foundations</i>	2,325,198	2,325,198
<i>A20 -Basement</i>	-	-
2 Shell	16,353,320	16,353,320
<i>B10 -Superstructure</i>	13,203,152	13,203,152
<i>B20 -Ext. Enclosure</i>	3,055,784	3,055,784
<i>B30 - Roofing</i>	94,383	94,383
3 Interiors	9,357,748	9,357,748
<i>C10 - Int. Construction</i>	3,214,155	3,214,155
<i>C20 - Stairs</i>	73,467	73,467
<i>C30 – Int. Finishes</i>	6,070,126	6,070,126
4 Services	31,806,721	32,218,246
<i>D10 - Conveying</i>	1,708,354	1,708,354
<i>D20 - Plumbing</i>	9,009,602	9,009,602
<i>D30 - HVAC</i>	6,535,627	6,718,372
<i>D40 - Fire Protection</i>	779,706	779,706
<i>D50 - Electrical</i>	13,773,431	14,002,211
5 Equip. & Furnishings	5,454,000	5,454,000
6 Special Construction	-	-
7 Building Sitework	-	-
Total Cost	\$65,296,987	\$65,708,512
	<i>Change from Previous:</i>	0.63%

¹All costs based on 2024 RS Means Central Florida Costs.

Mid-Rise Apartment:

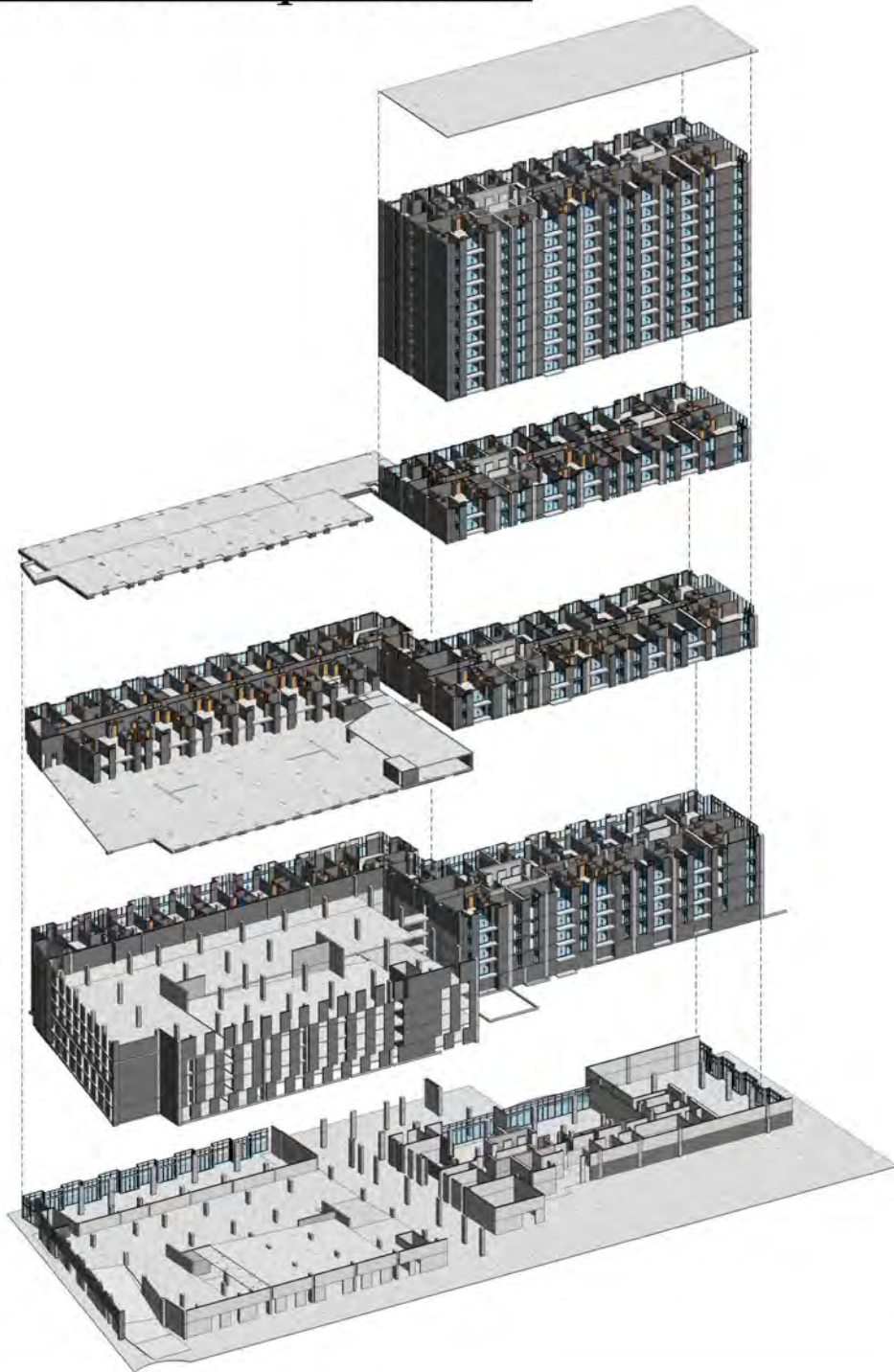


Figure E-1. 3D sections of Mid-Rise Apartment Building

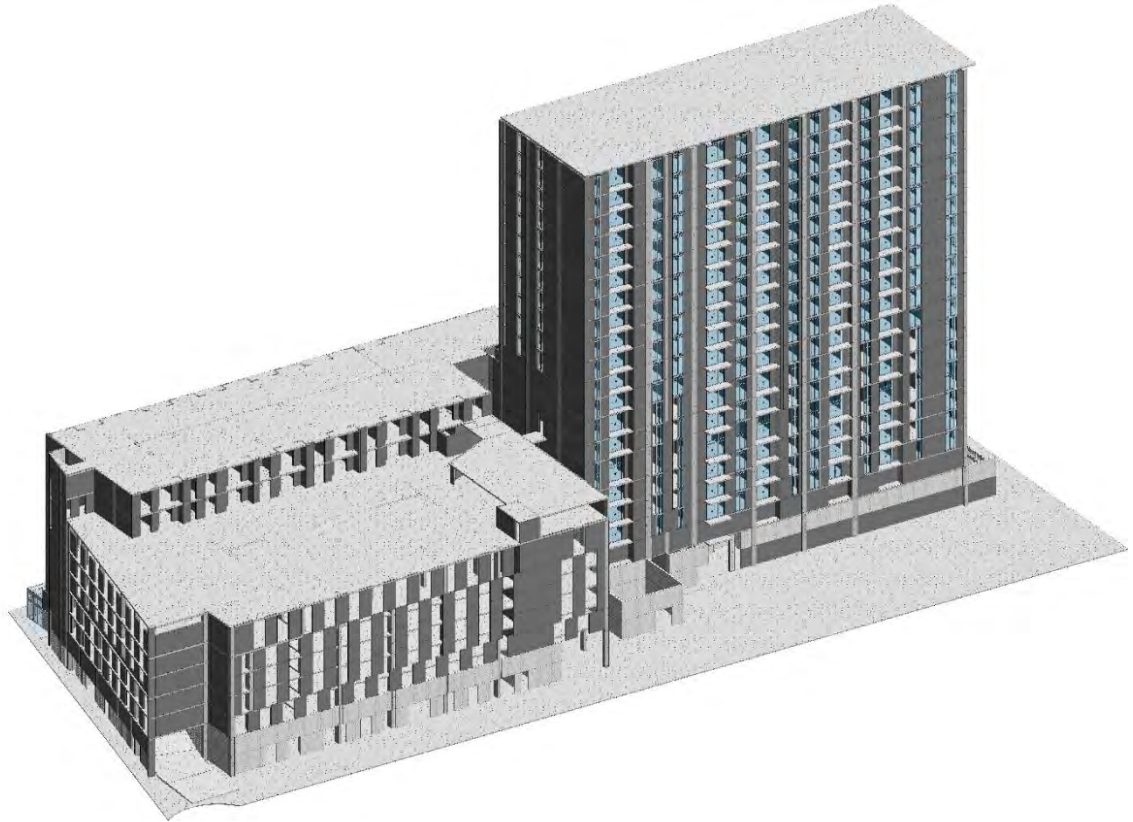


Figure E-2. 3D model of Mid-Rise Apartment Building

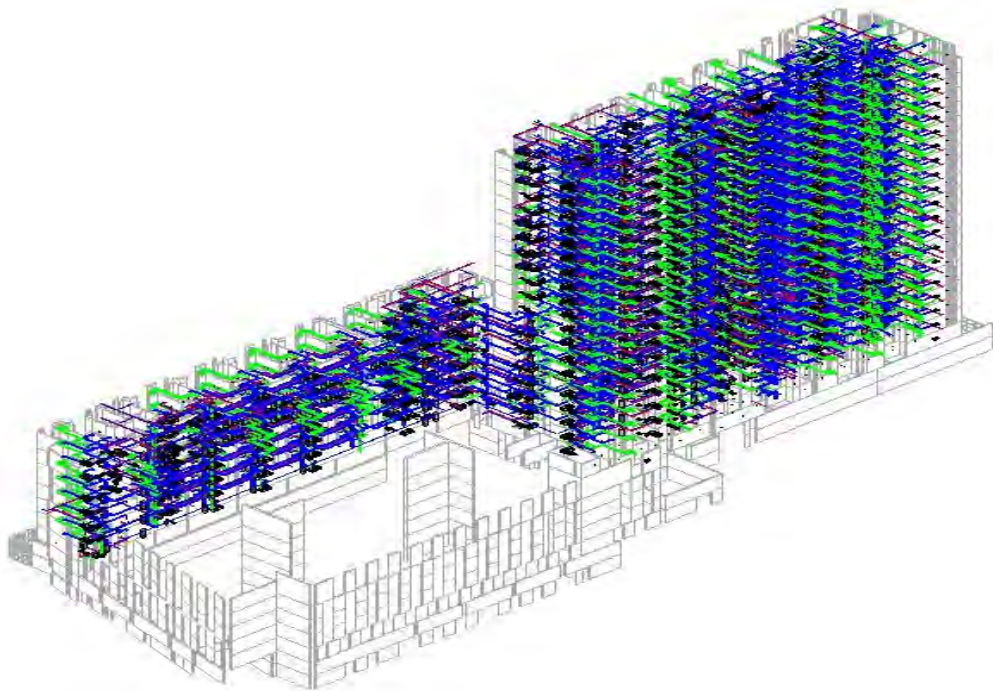


Figure E-2. 3D model of MEP systems for Mid-Rise Apartment Building

1-Story Residence

As shown in Figures F-1 through F-3, the residence has three bedrooms and an open concept kitchen and family room. There is an attached 385 SF two-car garage, and a concrete outdoor area connected the family room and kitchen. The hip roof is constructed of pre-engineered roof trusses with a standard shingle roof covering. The 2024 I-code changes impacted the 1-story residence at the electrical level of the prepared estimate. The building information models were used to develop the model for estimation and code adjustments to meet the 2024 ICC code changes.

The contributors to the cost increase found in the 2024 I-code were changes in GFCI protection, specifically the first change (FR8865), which introduces the expansion in coverage of GFCI protection in the branch circuits to provide protection to any outlets supplying the list of appliances regardless of vintage and whether or not GFCI protection is included in the appliance or in the cord., and the second change (FR8896), introduces the expansion in GFCI protection for dwelling outdoor outlets.

Table F. 1-Story Residence Cost Summary¹

<i>ASTM Uniformat II Levels</i>	2023 FBC Costs	2024 I-Codes Costs
1 <i>Site Work</i>	-	-
2 <i>Foundations</i>	24,031	24,031
3 <i>Framing</i>	57,115	57,115
4 <i>Exterior Walls</i>	84,993	84,993
5 <i>Roofing</i>	22,444	22,444
6 <i>Interiors</i>	40,473	40,473
7 <i>Specialties</i>	18,000	18,000
8 <i>Mechanical</i>	131,353	131,353
9 <i>Electrical</i>	57,096	57,546
Total Cost	\$435,506	\$435,956
	<i>Change from Previous:</i>	0.10%

¹All costs based on 2024 RS Means Central Florida Costs.

1-Story Residence:

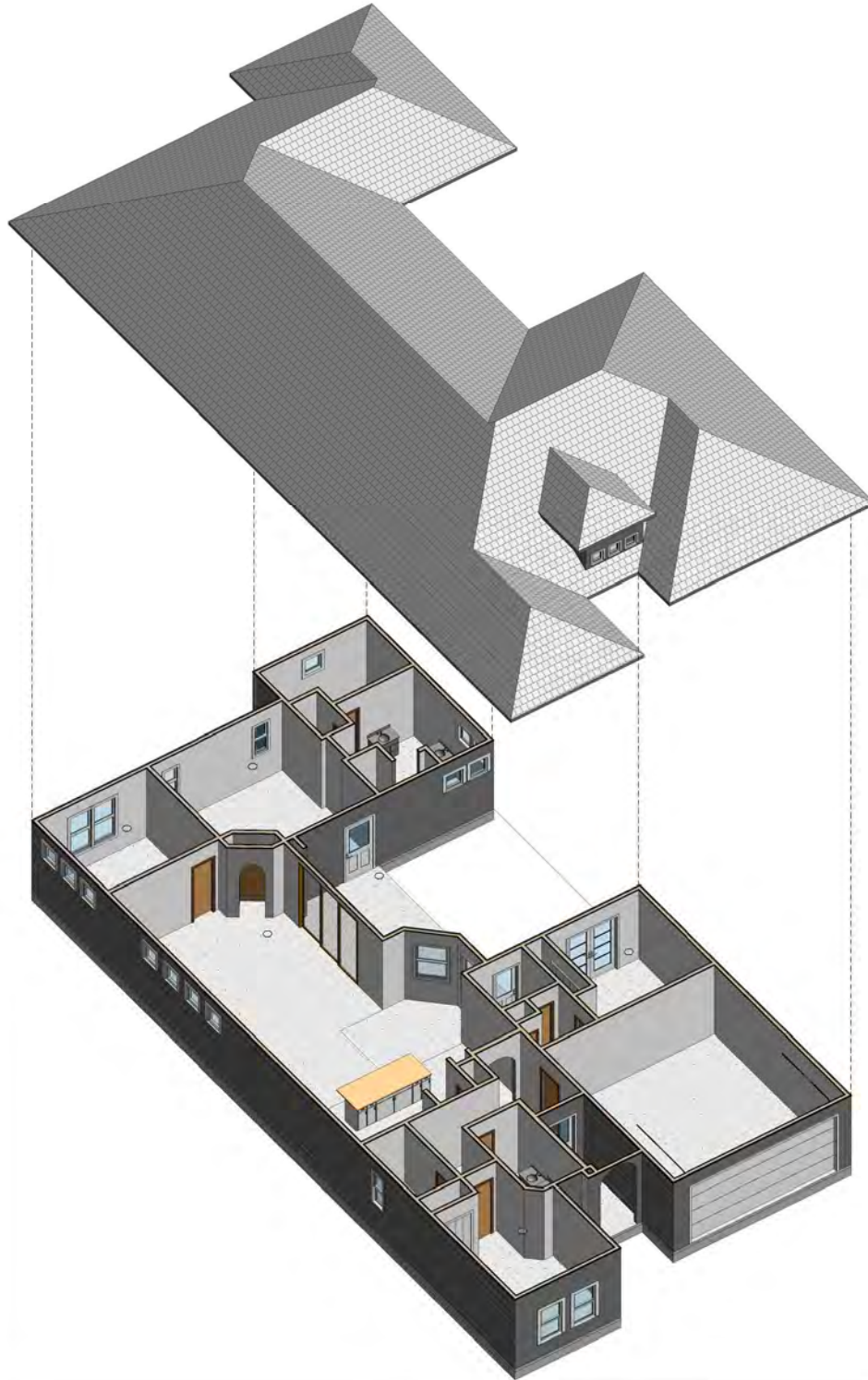


Figure F-1. 3D sections of 1-Story Residence

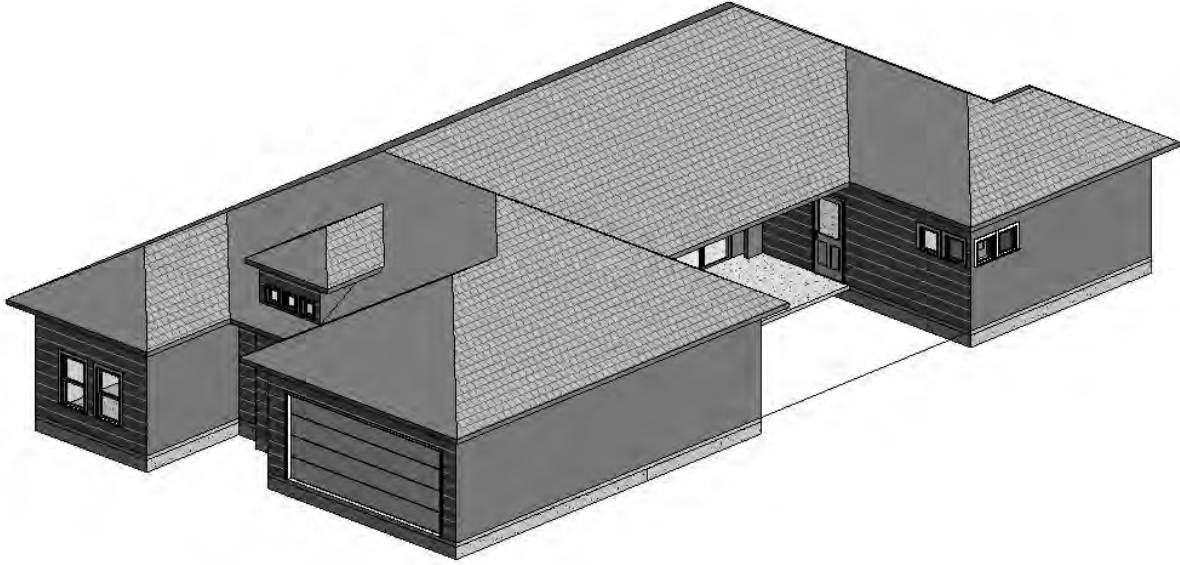


Figure F-2. 3D model of 1-Story Residence

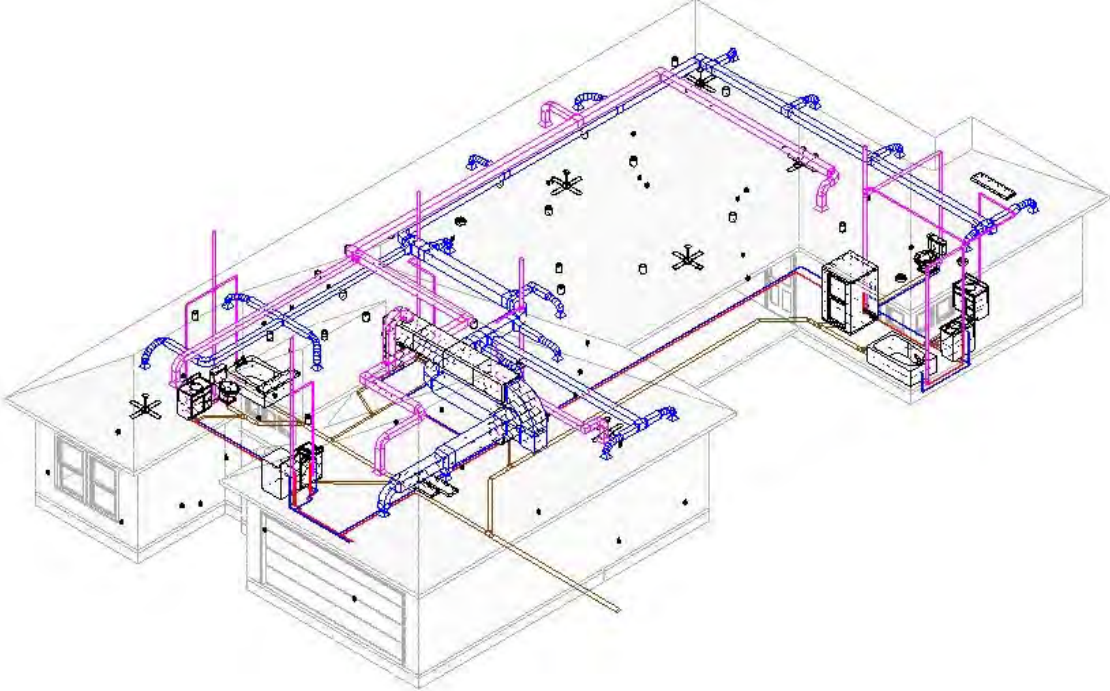


Figure F-3. 3D model MEP systems for 1-Story Residence

2-Story Residence

As shown in Figures G-1 through G-3, the residence has three bedrooms with the master suite on the lower level and two bedrooms on the second level. There is a 497 SF attached 2-car garage and an open style floor plan on the first floor. In addition to the two bedrooms, the second level has a game room and a bathroom connected to the two bedrooms. The roof over the lower level is a hip roof and the second level has a gable roof. Both roofs are made from pre-engineered roof trusses with a standard roof shingle covering. The 2024 I-code changes impacted the 2-story residence at the electrical levels of the prepared estimate. The building information models were used to develop the model for estimation and code adjustments to meet the 2024 ICC code changes.

The cost increases are due to changes in GFCI protection, with the first change (FR8865) adding an extra layer of safety for certain appliances to prevent electrical shocks. It applies to all appliances, regardless of their age or whether they already have some form of GFCI protection. The second change (FR8896) makes outdoor electrical outlets in homes safer by requiring them to have GFCI protection, especially when they are being replaced. The rule has been expanded to cover more outlets, and minor changes have been made to the wording for consistency.

Table G. 2-Story Residence Cost Summary¹

<i>ASTM Uniformat II Levels</i>	2023 FBC Costs	2024 I-Codes Costs
1 <i>Site Work</i>	-	-
2 <i>Foundations</i>	47,579	47,579
3 <i>Framing</i>	77,342.31	77,342.31
4 <i>Exterior Walls</i>	96,237	96,237
5 <i>Roofing</i>	32,955	32,955
6 <i>Interiors</i>	79,739	79,739
7 <i>Specialties</i>	21,949	21,949
8 <i>Mechanical</i>	199,697	199,697
9 <i>Electrical</i>	84,281	85,331
Total Cost	\$639,780	\$640,830
	<i>Change from Previous:</i>	0.16%

¹All costs based on 2024 RS Means Central Florida Costs.

2 Story Residence:

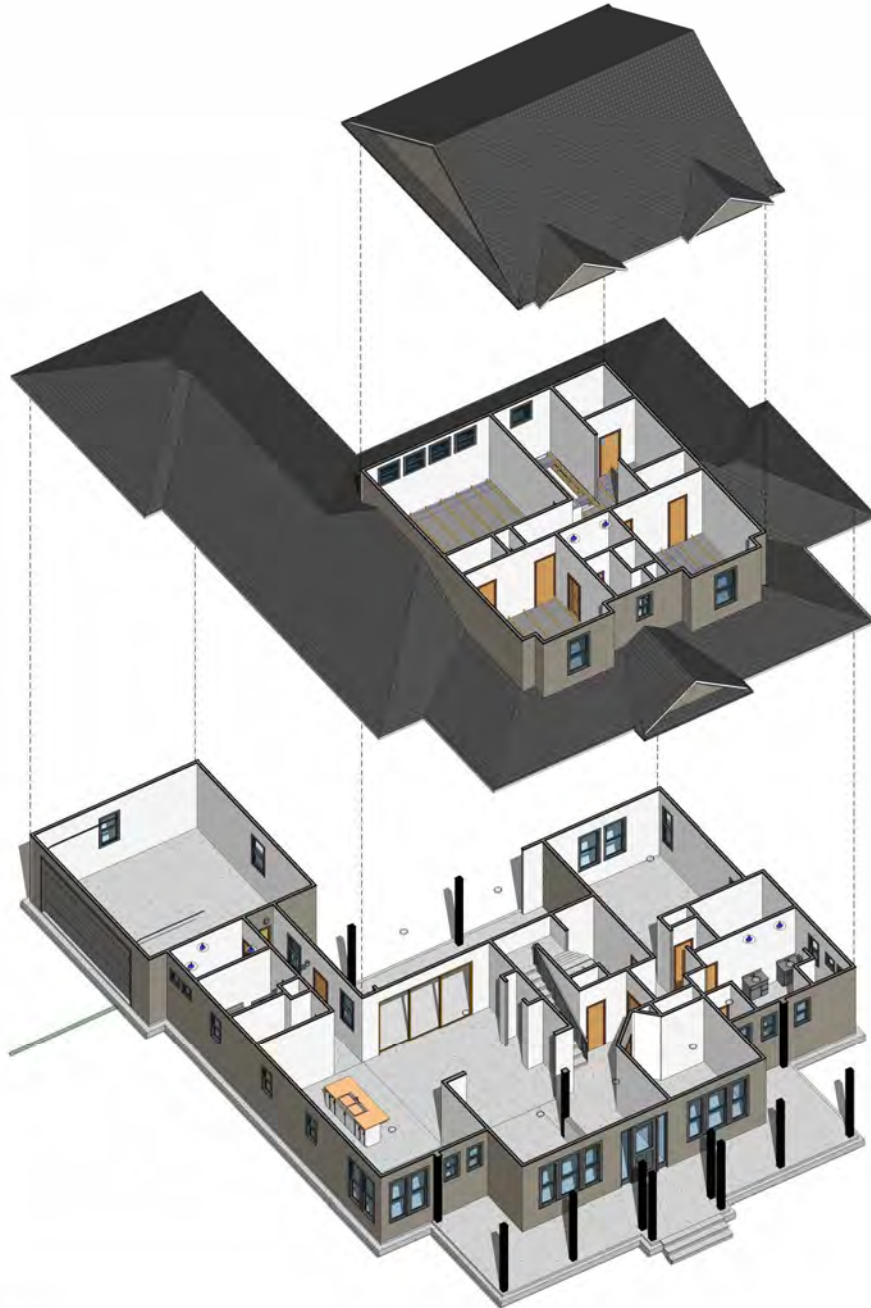


Figure G-1. 3D sections of 2-Story Residence

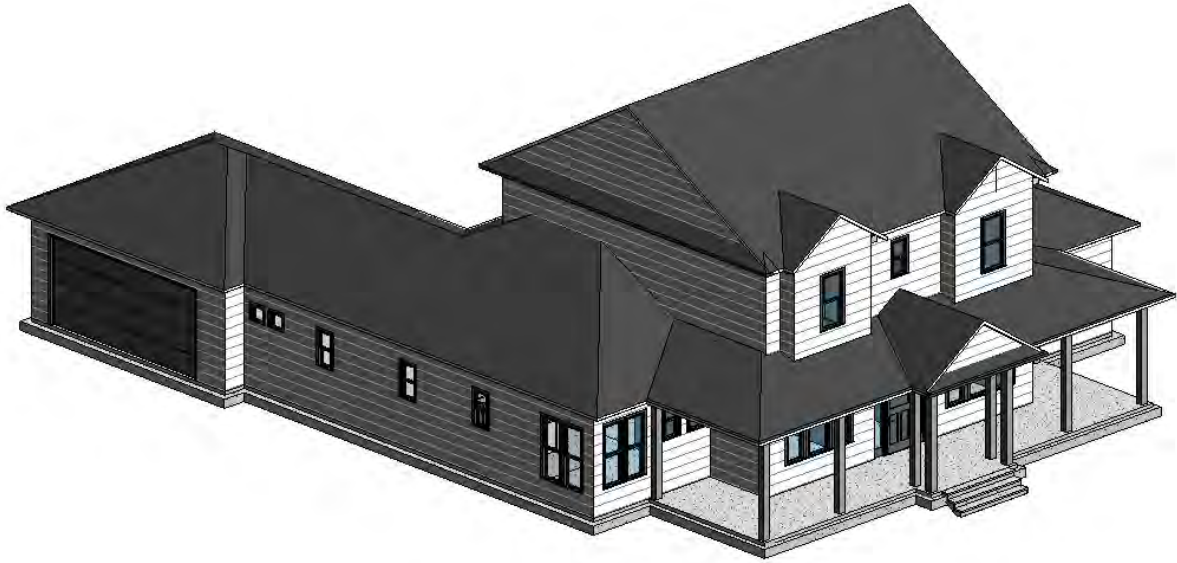


Figure G-2. 3D model of 2-Story Residence

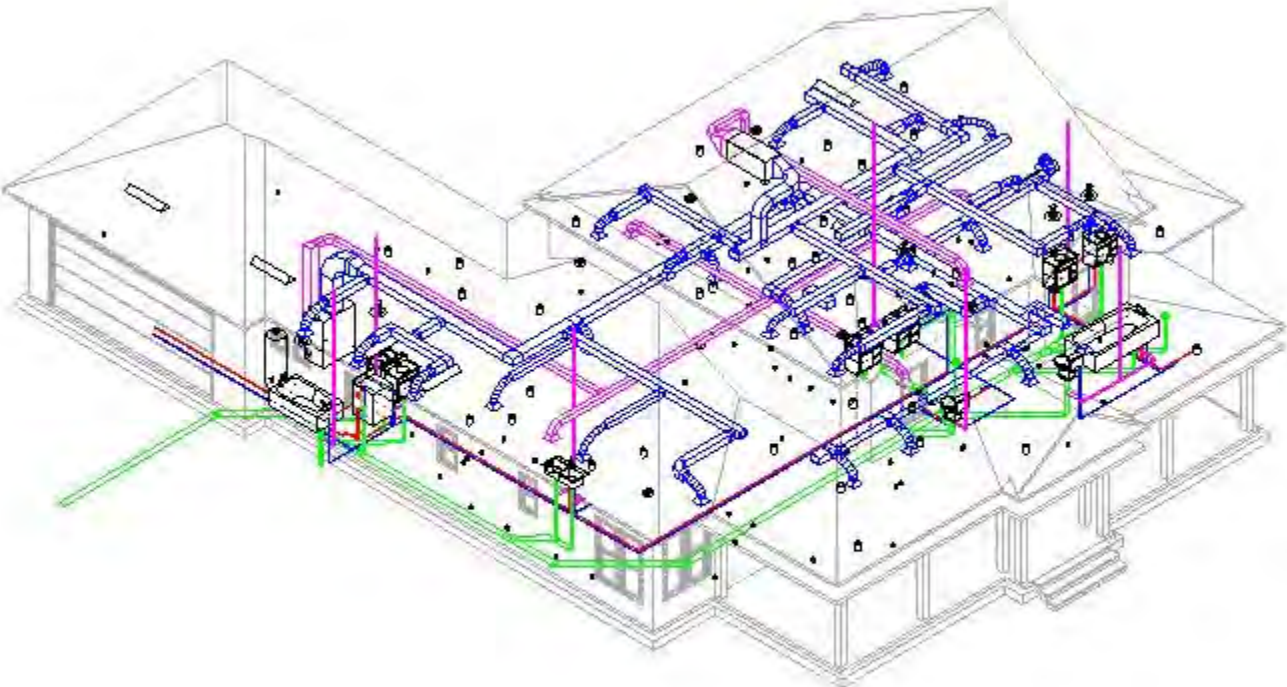


Figure G-3. 3D model MEP systems for 2-Story Residence

Conclusions and Recommendations

The 2024 I-Codes changes that are prescriptive in nature and have the potential of impacting construction cost were identified and used to develop cost estimates for two (2) prototype residential and five (5) prototype commercial/institutional building information models (BIMs). These construction cost estimates were used to make a comparison between the 2014 FBC specific code changes based on models of each of the seven building types.

The RS Means 2024 Cost data for the Orlando Region was used to price these prototype buildings. Model based quantities were used and verified along with some SF style estimates from RS means for certain systems that were not fully defined in the models. Based on these construction cost estimates, it was determined that the relative increase in cost due to the 2024 I-Codes changes ranged from approximately 0.11% for the Retail Spaces prototype to approximately 0.85% for the Small Hotel building. The estimated relative change in cost for the residences was approximately 0.10% for the 1-story house to approximately 0.16% for the 2-story house. The average changes in cost were approximately 0.45% for the commercial/institutional buildings and approximately 0.13% for the residences.

Future research should focus on the use of the developed models and estimates to evaluate future code changes. In addition, workshop webinars should be promoted to introduce and encourage designers, builders and other code change petitioners to use the models to prospectively evaluate the cost impact of their proposed code changes. Finally, the design of the existing models should be updated and other types of buildings should also be explored to develop an even more diverse set of building models.

APPENDIX A

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
M2-21	Revised definition as follows: CONDENSING UNIT. A specific refrigerating machine combination for a given refrigerant, consisting of one or more power-driven compressors, condensers and, where required, liquid receivers, and the regularly furnished accessories. A factory-made assembly of refrigeration components designed to compress and liquefy a specific refrigerant. The unit consists of one or more power-driven compressors, condensers, liquid receivers (where required) and factory-supplied accessories.			X	Adds 10-15% material cost per ton of cooling	The verbiage factory-made assembly may increase cost
M3-21	New definitions added for already used terms: 202 GYPSUM BOARD A type of gypsum panel product consisting of a noncombustible core primarily of gypsum with paper surfacing. GYPSUM WALLBOARD A gypsum board used primarily as an interior surfacing for building structures.		X			Clarification
M4-21	Deleted and substituted definition as follows: HEAT PUMP. A refrigeration system that extracts heat from one substance and transfers it to another portion of the same substance or to a second substance at a higher temperature for a beneficial purpose. HEAT PUMP. A refrigeration system or factory-made appliance that utilizes refrigerant to transfer heat into a space or substance.				Adds 10-15% material cost per ton of cooling	The verbiage factory-made assembly may increase cost
M5-21	Revised definition as follows: LOWER FLAMMABLE LIMIT (REFRIGERANT) (LFL). The minimum concentration of refrigerant that is at which a flame is capable of propagating a flame through a homogeneous mixture of refrigerant and air under specific test conditions in accordance with ASHRAE 34.		X			Clarification
M6-21	Revised definition as follows: NONCOMBUSTIBLE MATERIALS. A material that passes ASTM E136. Materials that, when tested in accordance with ASTM E136, have not fewer than three of four specimens tested meeting all of the following criteria:		X			More precise definition

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE					
		Decrease	Neutral	Increase							
Sub Code:											
	<p>1. The recorded temperature of the surface and interior thermocouples shall not at any time during the test rise more than 54°F (30°C) above the furnace temperature at the beginning of the test.</p> <p>2. There shall not be flaming from the specimen after the first 30 seconds.</p> <p>3. If the weight loss of the specimen during testing exceeds 50 percent, the recorded temperature of the surface and interior thermocouples shall not at any time during</p>										
M8-21	<p>Revised definition as follows: REFRIGERANT. A substance utilized to produce refrigeration by its expansion or vaporization. The fluid used for heat transfer in a refrigeration system that undergoes a change of state to absorb heat.</p>		X			Clarification					
M9-21	<p>Revised definition as follows: FLAMMABILITY CLASSIFICATION (REFRIGERANT). The alphabetical/numerical designation used to identify the flammability of refrigerants. <u>Class 1.</u> Indicates a refrigerant with no flame propagation. <u>Class 2.</u> Indicates a refrigerant with low flammability. <u>Class 2L.</u> Indicates a refrigerant with low flammability and low burning velocity. <u>Class 3.</u> Indicates a refrigerant with high flammability. TOXICITY CLASSIFICATION (REFRIGERANT). An alphabetical designation used to identify the toxicity of refrigerants. Class A indicates a refrigerant with low toxicity. Class B indicates a refrigerant with high toxicity.</p>		X			Clarification					
M10-21	<p>Revised definition as follows: REFRIGERATION-REFRIGERATING SYSTEM A combination of interconnected parts in which a refrigerant is enclosed and refrigerant containing parts constituting one closed refrigerant circuit in which a refrigerant is circulated for the purpose of extracting then rejecting heat.</p>		X			Clarification					
M12-21	<p>Deleted as follows: TABLE 305.4 PIPING SUPPORT SPACING Portions of Table not shown remain unchanged.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;">PIPING MATERIAL</th> <th style="width:35%;">MAXIMUM HORIZONTAL SPACING (ft)</th> <th style="width:35%;">MAXIMUM VERTICAL SPACING (ft.)</th> </tr> </thead> <tbody> <tr> <td>PB pipe or tubing</td> <td align="center">2 / (32 inches)</td> <td align="center">4</td> </tr> </tbody> </table>	PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (ft)	MAXIMUM VERTICAL SPACING (ft.)	PB pipe or tubing	2 / (32 inches)	4		X		Deletion
PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (ft)	MAXIMUM VERTICAL SPACING (ft.)									
PB pipe or tubing	2 / (32 inches)	4									
M13-21	<p>Revised as follows: 306.5 Equipment and appliances on roofs or elevated structures. Where equipment requiring access or appliances are located on an elevated structure or the roof</p>			X	Adds 20% per VLF to OSHA ladder material cost	Comply with OSHA ladder standards					

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	1. There shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) between rails 16 inches (406 mm) between rails.					
M14-21	Revised as follows: 306.5 Equipment and appliances on roofs or elevated structures. Where equipment requiring access or appliances are located on an elevated structure or the roof 1. <u>Top landing required. The ladder shall be provided with a clear and unobstructed landing on the exit side of the roof hatch having a minimum space of 30 inches deep and be of the same width as the hatch.</u>			X	Adds \$85 per SF of additional landing	Increased personnel safety
M16-21	Revised as follows: 401.4 Intake opening location. Air intake openings shall comply with all of the following: 3. Intake openings shall be located not less than 3 feet (914 mm) below contaminant sources where such sources are located within 10 feet (3048 mm) of the opening. Separation is not required between intake air openings and living space exhaust air openings of an individual dwelling unit or sleeping unit where an approved factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the <u>fan</u> manufacturer's instructions. 501.3.1 Location of exhaust outlets. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances: For all environmental air exhaust: 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable openings into buildings for all occupancies other than Group U; and 10 feet (3048 mm) from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious. Separation is not required between intake air openings and living space exhaust air openings of an individual dwelling unit or sleeping unit where an approved factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the <u>fan</u> manufacturer's instructions.	X			Decrease material cost 5% for factory-built combination intake/exhaust	Factory provided system only applies to individual dwelling unit or sleeping unit.
M19-21	Revised as follows: 403.3.1 Other buildings intended to be occupied. The design of local exhaust systems and ventilation systems for outdoor air for occupancies other than Group R-2, R-3 and R-4 three stories			X	Additional Outdoor Air adds \$10/cfm	The code update will increase ventilation rate

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE									
		Decrease	Neutral	Increase											
Sub Code:															
	<p>and less above grade plane shall comply with Sections 403.3.1.1 through 403.3.1.4.</p> <p>403.3.2 Group R-2, R-3 and R-4 occupancies, three stories and less. The design of local exhaust systems and ventilation systems for outdoor air in Group R-2, R-3 and R-4 occupancies three stories and less in height above grade plane shall comply with Sections 403.3.2.1 through 403.3.2.5.</p> <p>403.3.2.1 Outdoor air for dwelling units. An outdoor air ventilation system consisting of a mechanical exhaust system, supply system or combination thereof shall be installed for each dwelling unit. Local exhaust or supply systems, including outdoor air ducts connected to the return side of an air handler, are permitted to serve as such a system. The outdoor air ventilation system shall be designed to provide the required rate of outdoor air continuously during the period that the building is occupied. The minimum continuous outdoor airflow rate shall be determined in accordance with Equation 4-9:</p> $Q_{OA} = 0.01 \underline{0.03} A_{floor} + 7.5(N_{br} + 1)$				material and labor cost per additional cfm's required (Cost includes Mech – Air, Mech – Fluid and Electrical)	per floor area and more occupancy types.									
M20-21	<p>Addition as follows:</p> <p>TABLE 403.3.1.1 MINIMUM VENTILATION RATES Portions of Table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>OCCUPANCY CLASSIFICATION</th> <th>OCCUPANT DENSITY #/1000 FT² *</th> <th>PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_p CFM/PERSON</th> <th>AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_a CFM/FT² *</th> <th>EXHAUST AIRFLOW RATE CFM/FT² *</th> </tr> </thead> <tbody> <tr> <td>Room with adult changing station</td> <td></td> <td></td> <td align="center">↓</td> <td align="center">50/70^g</td> </tr> </tbody> </table>	OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT ² *	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _a CFM/FT ² *	EXHAUST AIRFLOW RATE CFM/FT ² *	Room with adult changing station			↓	50/70 ^g		X		The addition adds clarification. Adult changing stations are normally part of the bathroom facility, which has the same ventilation rate.
OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT ² *	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _a CFM/FT ² *	EXHAUST AIRFLOW RATE CFM/FT ² *											
Room with adult changing station			↓	50/70 ^g											
M21-21	<p>Revised as follows:</p> <p>TABLE 403.3.1.1 MINIMUM VENTILATION RATES</p>		X		The added spaces were not										

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY				IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
					Decrease	Neutral	Increase		
Sub Code:									
	Portions of Table not shown remain unchanged.								part of the original table. This is a detailed clarification, not a cost reduction.
	OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT² a	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_a CFM/FT² a	EXHAUST AIRFLOW RATE CFM/FT² a				
	Animal Facilities								
	Animal exam room (veterinary office)	20	10	0.12	-				
	Animal imaging (MRI/CT/PET)	20	10	0.18	0.9				
	Animal operating rooms	20	10	0.18	3.00				
	Animal postoperative recovery room	20	10	0.18	1.50				
	Animal preparation rooms	20	10	0.18	1.50				
	Animal procedure room	20	10	0.18	2.25				
	Animal surgery scrub	20	10	0.18	1.50				
	Large animal holding room	20	10	0.18	2.25				
	Necropsy	20	10	0.18	2.25				
	Small animal cage room (static cages)	20	10	0.18	2.25				
	Small animal cage room (ventilated cages)	20	10	0.18	1.50				
	Outpatient healthcare facilities^{1,1}								
	Birth room	15	10	0.18	-				
	Class 1 imaging room	5	5	0.12	-				
	Dental operator ^A	20	10	0.18	-				
	General examination room	20	7.5	0.12	-				
	Other dental treatment areas	5	5	0.06	-				
	Physical therapy exercise area	7	20	0.18	-				
	Physical therapy individual room	20	10	0.06	-				
	Physical therapeutic pool area	-	-	0.48	-				
	Prosthetics and orthotics room	20	10	0.18	-				
	Psychiatric consultation room	20	5	0.06	-				
	Psychiatric examination room	20	5	0.06	-				
	Psychiatric group room	50	5	0.06	-				
	Psychiatric seclusion room	5	10	0.06	-				
	Speech therapy room	20	5	0.06	-				
	Urgent care examination room	20	7.5	0.12	-				
	Urgent care observation room	20	5	0.06	-				
	Urgent care treatment room	20	7.5	0.18	-				
	Urgent care triage room	20	10	0.18	-				
	<p>i. Outpatient facilities to which the rates apply are freestanding birth centers, urgent care centers, neighborhood clinics and physicians' offices, Class 1 imaging facilities, outpatient psychiatric facilities, outpatient rehabilitation facilities, and outpatient dental facilities.</p> <p>j. The requirements of this table provide for acceptable IAQ. The requirements of this table do not address the airborne</p>								

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>transmission or airborne viruses, bacteria, and other infectious contagions.</u></p> <p><u>k. These rates are intended only for outpatient dental clinics where the amount of nitrous oxide is limited. They are not intended for dental operatories in institutional buildings where nitrous oxide is piped.</u></p> <p>407.1 General. Mechanical ventilation for ambulatory care facilities and Group I-2 occupancies shall be designed and installed in accordance with this code, ASHRAE 170 and /ASHE 170-2021 and NFPA 99.</p>					
M22-21	<p>Added footnote as follows:</p> <p>TABLE 403.3.1.1 MINIMUM VENTILATION RATES Portions of Table not shown remain unchanged.</p> <p>i. <u>The occupiable floor area in warehouses shall not include the floor area of self-storage units, floor areas under rack storage, or designated palletized storage floor areas.</u></p>			X	Additional Outdoor Air adds \$10/cfm material and labor cost per additional cfm's required (Cost includes Mech – Air, Mech – Fluid and Electrical)	The added clarification would reduce ventilation rate and decrease cost
M23-21	<p>Revised as follows:</p> <p>BALANCED VENTILATION SYSTEM A ventilation system where the total mechanical supply airflow and total mechanical exhaust airflow are simultaneously within 10 percent of their average. The balanced ventilation system airflow is the average of the mechanical supply and mechanical exhaust airflows. A ventilation system that simultaneously supplies outdoor air to and exhausts air from a space, where the mechanical supply airflow rate and the mechanical exhaust airflow rate are each within 10% of the average of the two airflow rates.</p>		X			Editorial Clarification
M24-21	<p>Revised as follows:</p> <p>TABLE 403.3.2.3 MINIMUM REQUIRED LOCAL EXHAUST RATES FOR GROUP R-2, R-3 AND R-4 OCCUPANCIES</p>			X	Add \$1250 Material Labor cost	Clarification for Consistency

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE						
		Decrease	Neutral	Increase								
Sub Code:												
	<p>Portions of Table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>AREA TO BE EXHAUSTED</th> <th>EXHAUST RATE CAPACITY</th> </tr> </thead> <tbody> <tr> <td>Kitchens</td> <td>100 cfm intermittent or 25-50 cfm continuous</td> </tr> <tr> <td>Bathrooms and toilet rooms</td> <td>50 cfm intermittent or 20-25 cfm continuous</td> </tr> </tbody> </table>	AREA TO BE EXHAUSTED	EXHAUST RATE CAPACITY	Kitchens	100 cfm intermittent or 25 -50 cfm continuous	Bathrooms and toilet rooms	50 cfm intermittent or 20 -25 cfm continuous				for added 50 cfm Kitchen Exhaust (includes Mechanical – Air equipment and duct) Add \$375 Material Labor cost for additional 50 cfm Kitchen Exhaust (includes Mechanical – Air equipment and duct)	Ventilation rate increase would result in cost increase
AREA TO BE EXHAUSTED	EXHAUST RATE CAPACITY											
Kitchens	100 cfm intermittent or 25 -50 cfm continuous											
Bathrooms and toilet rooms	50 cfm intermittent or 20 -25 cfm continuous											
M25-21	<p>Delete without substitution: SECTION 403 — MECHANICAL VENTILATION Add new text as follows: APPENDIX D CLEAN AIR DELIVERY User Note . The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance. About this appendix: Appendix D provides criteria for an increased protection level for occupant health by delivering and monitoring clean air in occupied areas of certain buildings. 408.4 D101 Clean Air Delivery Capability. Each mechanical system shall meet the requirements in 408.4.1 <u>Section D101.1</u>. Each occupiable space shall meet the requirements in 408.4.2 <u>D101.2</u>. Exceptions: 1. Group R occupancies. 2. Occupiable spaces where 100% of the supply air meets High-efficiency Particulate Air filtration. 3. <u>Rooms with less than 500 square feet of occupiable space.</u></p>			X	Add \$1750 Material Labor cost for each additional outlet required for plug in Air Purification (includes Electrical Back Box, Outlet, Conduit Wire, Termination s)	Prepares buildings for retrofits and other changes if indoor clean air delivery needs to be increased in the future.						

Table 1. 2024 IMC Changes Cost Impact

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Sub Code:						
	<p>403.4.1 D101.1 Airflow for Increased Filtration. Mechanical systems shall be sized to accommodate a design airflow at a total static pressure drop which assumes the utilization of a supply air filter with a Minimum Efficiency Reporting Value of no less than 13.</p> <p>403.4.2 D101.2 Zonal Filtration or Disinfection Capability. Each occupiable space greater than 500 square feet shall have at least one 125-volt, single-phase, 15- or 20-ampere receptacle outlet installed in an accessible location for the cord-and-plug connection of a supplemental air cleaning appliance. One additional receptacle outlet shall be installed for each additional 1000 square feet of occupiable space. The installation shall comply with NFPA 70. shall have 120-volt receptacles which provide at least 0.2 watts per square foot of occupiable space above the requirements of the National Electrical Code to support supplemental air cleaning devices. which provide at least 0.2 watts per square foot of occupiable space above the requirements of the National Electrical Code to support supplemental air cleaning devices.</p>					
M26-21	<p>Add new text as follows:</p> <p align="center"><u>Appendix D Clean Air Delivery</u></p> <p>User Note . <i>The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.</i></p> <p>About this appendix: <i>Appendix D provides criteria for an increased protection level for occupant health by delivering and monitoring clean air in occupied areas of the certain buildings.</i></p> <p>D101 Demand Control Ventilation. Group A, B, E and I occupancies shall be equipped with a minimum of one carbon dioxide sensor for every 500 square feet of occupiable space. Carbon dioxide sensors installed in accordance with this section shall meet the requirements in Sections D101.1 and D101.3. Mechanical equipment serving each zone(s) shall be equipped with controls which meet the requirements in Section D101.2.</p> <p>Exception: Occupiable zones less than 500 square feet.</p> <p>D101.1 Carbon Dioxide Sensor Performance Specifications. Each carbon dioxide sensor installed in accordance with Section D101 shall meet the following carbon dioxide measurement specifications as certified by the equipment manufacturer:</p>		X		Optional requirements.	

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<ol style="list-style-type: none"> 1. <u>Range lower bound less than or equal to 400 parts per million</u> 2. <u>Range upper bound greater than or equal to 2,000 parts per million</u> 3. <u>Accuracy within ±75 parts per million at a reading of 1,000 parts per million</u> 4. <u>Output resolution less than or equal to 20 parts per million</u> <p>D101.2 Mechanical System Controls. <u>Controls installed in accordance with Section D101 shall:</u></p> <ol style="list-style-type: none"> 1. <u>Receive data from the carbon dioxide sensor in the occupiable zone(s) at least once per 5 minutes</u> 2. <u>Be calibrated to provide pre-established outdoor airflow rates, or be equipped with the necessary instrumentation to measure outdoor airflow</u> 3. <u>Be capable of adjusting the outdoor airflow in response to an adjustable outdoor airflow setpoint</u> 4. <u>Increase the amount of outdoor air provided to each occupiable zone until the carbon dioxide level in each occupiable zone falls below a maximum threshold as defined by the user</u> <p>D101.3 Carbon dioxide detection threshold level. <u>The default detection threshold level for carbon dioxide measurement above which triggers an alert in accordance with Section D101.4 shall be set to 1,100 parts per million. The end user can modify the detection threshold level based on specific operations and needs.</u></p> <p>D101.4 Carbon dioxide detection threshold level exceeded . <u>When carbon dioxide levels exceed the detection threshold level established in Section D101.3, the mechanical equipment shall modify the outdoor airflow rate as required in Section D101.2. When the carbon dioxide concentration remains above the detection threshold level for a period of 30 minutes or more, the occupants in the zone shall be alerted by approved audible and visual notification devices or through a building monitoring system.</u></p>					
M28-21	<p>Revised as follows:</p> <p>501.3.1 Location of exhaust outlets. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:</p>	X			Savings of \$1500 per exhaust outlet location	Gravity air intake opening differs from other operable openings. The

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	3. For all environmental air exhaust: 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable openings, <u>except where the exhaust opening is located not less than 1 foot (305 mm) above the gravity air intake opening into buildings for all occupancies other than Group U; and 10 feet (3048 mm) from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious. Separation is not required between intake air openings and living space exhaust air openings of an individual dwelling unit or sleeping unit where an approved factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the manufacturer's instructions.</u>					change could benefit by not running long exhaust outlets.
M29-21 Part 1	Added the following: 501.6 Common ducts. <u>The discharge from exhaust fans serving separate dwelling or sleeping units shall not be connected to a common duct or shaft, except where the common duct or shaft is maintained at a negative pressure.</u>			X	Add \$1000 per separate exhaust outlet extension	Protect public health and safety
M31-21	Revise as follows: 504.10 Commercial clothes dryers. The installation of dryer exhaust ducts serving commercial clothes dryers shall comply with the appliance manufacturer’s installation instructions. Exhaust fan motors installed in exhaust systems shall be located outside of the airstream. In multiple installations, the fan shall operate continuously or be interlocked to operate when any individual unit is operating. Ducts shall have a minimum clearance of 6 inches (152 mm) to combustible materials. Clothes dryer transition ducts used to connect the appliance to the exhaust duct system shall be limited to single lengths not to exceed 8 feet (2438 mm) in length and shall be listed and labeled <u>in accordance with UL 2158A for the application.</u> Transition ducts shall not be concealed within construction.		X			Protect public health and safety
M32-21	Revised as follows: 505.3 Exhaust ducts. Domestic cooking exhaust equipment shall discharge to the outdoors through sheet metal ducts constructed of galvanized steel, stainless steel, aluminum or copper. Such ducts shall have smooth inner walls, shall be airtight and shall be equipped with a backdraft damper. Installations in Group I-1 and I-2 occupancies shall be in accordance with the International Building Code and Section	X			Savings of \$1250 per exhaust location for a ductless range hood	Allows listed and labeled ductless domestic range hoods, that meet specific criteria, over domestic

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>904.14 of the International Fire Code and <u>Section 505.7 or 505.8.</u> Exceptions: 1. <u>In other than Groups I-1 and I-2, where</u> where <u>installed in accordance with the manufacturer’s instructions and where mechanical or natural ventilation is otherwise provided in accordance with Chapter 4, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.</u> Add new text as follows: 505.7 Group I-1 Occupancies. <u>In Group I-1 Occupancies, hood installations over domestic cooking equipment installed in accordance with Section 420.9 of the International Building Code shall comply with the following:</u> 1. <u>Range hoods shall have a minimum air flow rate of 500 cfm. (14,000 L/min).</u> 2. <u>Mechanical ventilation shall be provided to the rooms or spaces containing the domestic cooking equipment in accordance with Section 403.3.1.</u> 3. <u>Range hood exhaust shall discharge to the outdoors.</u> <u>Exception: A listed and labeled ductless range hood shall be permitted where a charcoal filter is provided in the hood to reduce smoke and odors.</u> 505.8 Group I-2 Occupancies. <u>In Group I-2 Occupancies, hood installations over domestic cooking equipment installed in accordance with Section 407.2.7 of the International Building Code shall comply with the following:</u> 1. <u>Range hoods shall have a minimum air flow rate of 500 cfm. (14,000 L/min).</u> 2. <u>Mechanical ventilation shall be provided to the rooms or spaces containing the domestic cooking equipment in accordance with Section 403.3.1.</u> 3. <u>Range hood exhaust shall discharge to the outdoors.</u> <u>Exception: A listed and labeled ductless range hood shall be permitted where a charcoal filter is provided in the hood to reduce smoke and odors.</u></p>					cooking appliances in limited applications for I-1 and I-2 Occupancies.
M34-21	<p>Revised as follows: 506.2 Corrosion protection. <u>Ducts and exhaust equipment exposed to the outside atmosphere or subject to a corrosive environment shall be protected against corrosion in an approved manner.</u></p>		X			Clarification

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
M35-21	<p>Added new definition as follows: GREASE DUCT <u>A duct serving a Type I hood, or cooking appliances equipped with integral down-draft exhaust systems that produce grease, to convey grease-laden air from the hood or cooking appliance directly to the outdoors.</u> Revised as follows: 506.3 Ducts serving Type I hoods Grease duct systems. Type I exhaust ducts shall be independent of all other exhaust systems except as provided in Section 506.3.5. Commercial kitchen Grease duct systems serving Type I hoods shall be designed, constructed and installed in accordance with Sections 506.3.1 through 506.3.13.3. Deleted without substitution: 506.3.1 Duct materials. Ducts serving Type I hoods shall be constructed of materials in accordance with Sections 506.3.1.1 and 506.3.1.2. 506.3.1.1 506.3.1 Grease duct materials. Grease ducts serving Type I hoods shall be constructed of steel having a minimum thickness of 0.0575 inch (1.463 mm) (No. 16 gage) or stainless steel not less than 0.0450 inch (1.14 mm) (No. 18 gage) in thickness. Exception: Factory-built commercial kitchen grease ducts listed and labeled in accordance with UL 1978 and installed in accordance with Section 304.1. 506.3.2 Joints, seams and penetrations of grease ducts. Joints, seams and penetrations of grease ducts shall be made with a continuous liquid-tight weld or braze made on the external surface of the <u>grease</u> duct system. 506.3.2.1 Grease Duct duct joint types. Grease duct Duct joints shall be butt joints, welded flange joints with a maximum flange depth of /inch (12.7 mm) or overlapping duct joints of either the telescoping or bell type. Overlapping joints shall be installed to prevent ledges and obstructions from collecting grease or interfering with gravity drainage to the intended collection point. The difference between the inside cross-sectional dimensions of overlapping sections of duct shall not exceed 1/4 inch (6.4 mm). The length of overlap for overlapping duct joints shall not exceed 2 inches (51 mm).</p>		X			The benefit of the code update is clarifying grease duct definition and distinguish the application from other ductwork.

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Sub Code:						
	<p>506.3.2.2 Grease Duct-duct-to-hood joints. Grease Duct-duct-to-hood joints shall be made with continuous internal or external liquid-tight welded or brazed joints. Such joints shall be smooth, accessible for inspection, and without grease traps.</p> <p>Exceptions: This section shall not apply to:</p> <ol style="list-style-type: none"> 1. A vertical duct-to-hood collar connection made in the top plane of the hood in accordance with all of the following: <ol style="list-style-type: none"> 1.1. The hood duct opening the exhaust outlet of the hood shall have a 1-inch-deep (25 mm), full perimeter, welded flange turned down into the hood interior at an angle of 90 degrees (1.57 rad) from the plane of the opening. 1.2. The <u>grease duct</u> shall have a 1-inch-deep (25 mm) flange made by a 1-inch by 1-inch (25 mm by 25 mm) angle iron welded to the full perimeter of the grease duct not less than 1 inch (25 mm) above the bottom end of the duct. 1.3. A gasket rated for use at not less than 1,500°F (816°C) is installed between the <u>grease duct</u> flange and the top of the hood. 1.4. The <u>grease duct</u>-to-hood joint shall be secured by stud bolts not less than 1/4 inch (6.4 mm) in diameter welded to the hood with a spacing not greater than 4 inches (102 mm) on center for the full perimeter of the opening. The bolts and nuts shall be secured with lock washers. 2. Listed and labeled <u>grease duct</u>-to-hood collar connections installed in accordance with Section 304.1. <p>506.3.2.3 Grease Duct-duct-to-exhaust fan connections. Grease Duct duct-to-exhaust fan connections shall be flanged and gasketed at the base of the fan for vertical discharge fans; shall be flanged, gasketed and bolted to the inlet of the fan for side-inlet utility fans; and shall be flanged, gasketed and bolted to the inlet and outlet of the fan for in-line fans. Gasket and sealing materials shall be rated for continuous duty at a temperature of not less than 1,500°F (816°C).</p> <p>506.3.2.4 Vibration isolation. A vibration isolation connector for connecting a <u>grease duct</u> to a fan shall consist of noncombustible packing in a metal sleeve joint of approved design or shall be a coated-fabric flexible <u>grease duct</u> connector listed and labeled for the application.</p>					

Table 1. 2024 IMC Changes Cost Impact

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	<p>Vibration isolation connectors shall be installed only at the connection of a <u>grease</u> duct to a fan inlet or outlet.</p> <p>506.3.2.5 Grease duct test. Prior to the use or concealment of any portion of a grease duct system, a leakage test shall be performed.</p> <p><u>Grease ducts</u> Ducts shall be considered to be concealed where installed in shafts or covered by coatings or wraps that prevent the ductwork grease ducts from being visually inspected on all sides. The permit holder shall be responsible to provide the necessary equipment and perform the grease duct leakage test. A light test shall be performed to determine that all welded and brazed joints are liquid tight.</p> <p>A light test shall be performed by passing a lamp having a power rating of not less than 100 watts through the entire section of ductwork <u>grease ducts</u> to be tested. The lamp shall be open so as to emit light equally in all directions perpendicular to the duct walls. A test shall be performed for the entire grease duct system, including the hood-to-duct connection. The <u>grease duct work system</u> shall be permitted to be tested in sections, provided that every joint is tested. For listed factory-built <u>grease</u> ducts, this test shall be limited to duct joints assembled in the field and shall exclude factory welds.</p> <p>506.3.3 Grease duct supports. Grease duct bracing and supports shall be of noncombustible material securely attached to the structure and designed to carry gravity and seismic loads within the stress limitations of the International Building Code . Bolts, screws, rivets and other mechanical fasteners shall not penetrate <u>grease</u> duct walls.</p> <p>506.3.4 Air velocity. Grease duct systems serving a Type I hood shall be designed and installed to provide an air velocity within the grease duct system of not less than 500 feet per minute (2.5 m/s).</p> <p>Exception: The velocity limitations shall not apply within <u>grease</u> duct transitions utilized to connect grease ducts to differently sized or shaped openings in hoods and fans, provided that such transitions do not exceed 3 feet (914 mm) in length and are designed to prevent the trapping of grease.</p> <p>506.3.5 Separation of grease duct system. A separate grease duct system shall be provided for each Type I hood. A separate</p>					

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Sub Code:						
	<p>grease duct system is not required where all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. All interconnected hoods are located within the same story. 2. All interconnected hoods are located within the same room or in adjoining rooms. 3. Interconnecting <u>grease</u> ducts do not penetrate assemblies required to be fire-resistance rated. 4. The grease duct system does not serve solid-fuel-fired appliances. <p>506.3.7 Prevention of grease accumulation in grease ducts. Duct <u>Grease</u> duct systems serving a Type I hood shall be constructed and installed so that grease cannot collect in any portion thereof, and the system shall slope not less than one-fourth unit vertical in 12 units horizontal (2-percent slope) toward the hood or toward a grease reservoir designed and installed in accordance with Section 506.3.7.1.</p> <p>Where horizontal grease ducts exceed 75 feet (22 860 mm) in length, the slope shall be not less than one unit vertical in 12 units horizontal (8.3-percent slope).</p> <p>Exception: Factory-built grease ducts shall be installed at a slope that is in accordance with the listing and manufacturer's installation instructions.</p> <p>506.3.7.1 Grease duct reservoirs. Grease duct reservoirs shall:</p> <ol style="list-style-type: none"> 1. Be constructed as required for the grease duct they serve. 2. Be located on the bottom of the horizontal grease duct or the bottommost section of the grease duct riser. 3. Extend across the full width of the <u>grease</u> duct and have a length of not less than 12 inches (305 mm). 4. Have a depth of not less than 1 inch (25 mm). 5. Have a bottom that slopes to a drain. 6. Be provided with a cleanout opening constructed in accordance with Section 506.3.8 and installed to provide direct access to the reservoir. The cleanout opening shall be located on a side or on top of the <u>grease</u> duct so as to permit cleaning of the reservoir. 7. Be installed in accordance with the manufacturer's instructions where manufactured devices are utilized. <p>506.3.8 Grease duct cleanouts and openings. Grease duct cleanouts and openings shall comply with all of the following:</p>					

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	<p>1. Grease ducts shall not have openings except where required for the operation and maintenance of the system.</p> <p>2. Sections of grease ducts that are inaccessible from the hood or discharge openings shall be provided with cleanout openings spaced not more than 20 feet (6096 mm) apart and not more than 10 feet (3048 mm) from changes in direction greater than 45 degrees (0.79 rad).</p> <p>3. Cleanouts and openings shall be equipped with tight-fitting doors constructed of steel having a thickness not less than that required for the grease duct.</p> <p>4. Cleanout doors shall be installed liquid tight.</p> <p>5. Door assemblies including any frames and gaskets shall be approved for the application and shall not have fasteners that penetrate the <u>grease</u> duct.</p> <p>6. Gasket and sealing materials shall be rated for not less than 1,500°F (816°C).</p> <p>7. Listed door assemblies shall be installed in accordance with the manufacturer’s instructions.</p> <p>506.3.8.1 Personnel entry. Where a <u>grease duct ductwork</u> is large enough to allow entry of personnel, not less than one approved or listed opening having dimensions not less than 22 inches by 20 inches (559 mm by 508 mm) shall be provided in the horizontal sections, and in the top of vertical risers. Where such entry is provided, the grease duct and its supports shall be capable of supporting the additional load, and the cleanouts specified in Section 506.3.8 are not required.</p> <p>506.3.8.2 Cleanouts serving in-line fans. A cleanout shall be provided for both the inlet side and outlet side of an in-line fan except where a <u>grease</u> duct does not connect to the fan. Such cleanouts shall be located within 3 feet (914 mm) of the fan duct connections.</p> <p>506.3.9 Grease duct horizontal cleanouts. Cleanouts serving horizontal sections of grease ducts shall:</p> <ol style="list-style-type: none"> 1. Be spaced not more than 20 feet (6096 mm) apart. 2. Be located not more than 10 feet (3048 mm) from changes in direction that are greater than 45 degrees (0.79 rad). 3. Be located on the bottom only where other locations are not available and shall be provided with internal damming of the opening such that grease will flow past the opening without 					

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	<p>pooling. Bottom cleanouts and openings shall be approved for the application and installed liquid tight.</p> <p>4. Not be closer than 1 inch (25 mm) from the edges of the <u>grease</u> duct.</p> <p>5. Have opening dimensions of not less than 12 inches by 12 inches (305 mm by 305 mm). Where such dimensions preclude installation, the opening shall be not less than 12 inches (305 mm) on one side and shall be large enough to provide access for cleaning and maintenance.</p> <p>6. Be located at grease reservoirs.</p> <p>7. Be located within 3 feet (914 mm) of horizontal discharge fans.</p> <p>506.3.10 Underground grease duct installation. Underground grease duct installations shall comply with all of the following:</p> <p>1. Underground grease ducts shall be constructed of steel having a minimum thickness of 0.0575 inch (1.463 mm) (No. 16 gage) and shall be coated to provide protection from corrosion or shall be constructed of stainless steel having a minimum thickness of 0.0450 inch (1.140 mm) (No. 18 gage).</p> <p>2. The underground grease duct system shall be tested and approved in accordance with Section 506.3.2.5 prior to coating or placement in the ground.</p> <p>3. The underground grease duct system shall be completely encased in concrete with a minimum thickness of 4 inches (102 mm).</p> <p>4. Ducts shall slope toward grease reservoirs.</p> <p>5. A grease reservoir with a cleanout to allow cleaning of the reservoir shall be provided at the base of each vertical grease duct riser.</p> <p>6. Cleanouts shall be provided with access to permit cleaning and inspection of the <u>grease</u> duct in accordance with Section 506.3.</p> <p>7. Cleanouts in horizontal grease ducts shall be installed on the topside of the <u>grease</u> duct.</p> <p>8. Cleanout locations shall be legibly identified at the point of access from the interior space.</p> <p>506.3.11 Grease duct enclosures. A commercial kitchen grease duct serving a Type I hood that penetrates a ceiling, wall, floor or any concealed space shall be enclosed from the point of penetration to the outlet terminal. In-line exhaust fans not</p>					

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	<p>located outdoors shall be enclosed as required for grease ducts. A <u>grease</u> duct shall penetrate exterior walls only at locations where unprotected openings are permitted by the International Building Code . The <u>grease</u> duct enclosure shall serve a single grease duct and shall not contain other ducts, piping or wiring systems. Grease duct Duct enclosures shall be a shaft enclosure in accordance with Section 506.3.11.1, a field applied enclosure assembly in accordance with Section 506.3.11.2 or a factory-built <u>grease</u> duct enclosure assembly in accordance with Section 506.3.11.3. Grease duct Duct enclosures shall have a fire-resistance rating of not less than that of the assembly penetrated and not less than 1 hour. Fire dampers and smoke dampers shall not be installed in grease ducts.</p> <p>Exception: A <u>grease</u> duct enclosure shall not be required for a grease duct that penetrates only a nonfire-resistance-rated roof/ceiling assembly.</p> <p>506.3.11.1 Shaft enclosure. Grease ducts constructed in accordance with Section 506.3.1 shall be permitted to be enclosed in accordance with the International Building Code requirements for shaft construction. Such grease duct systems and exhaust equipment shall have a clearance to combustible construction of not less than 18 inches (457 mm), and shall have a clearance to noncombustible construction and gypsum wallboard attached to noncombustible structures of not less than 6 inches (152 mm). Shaft Duct enclosures shall be sealed around the <u>grease</u> duct at the point of penetration and vented to the outside of the building through the use of weather-protected openings.</p> <p>506.3.11.2 Field-applied grease duct enclosure. Grease ducts constructed in accordance with Section 506.3.1 shall be enclosed by a listed and labeled field-applied grease duct enclosure material, systems, product, or method of construction specifically evaluated for such purpose in accordance with ASTM E2336. The surface of the <u>grease</u> duct shall be continuously covered on all sides from the point at which the <u>grease</u> duct originates to the outlet terminal. Grease duct Duct penetrations shall be protected with a through-penetration firestop system tested and listed in accordance with ASTM E814 or UL 1479 and having a “F” and “T” rating equal to the fire-resistance rating of the assembly being</p>					

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	<p>penetrated. The grease duct enclosure and firestop system shall be installed in accordance with the listing and the manufacturer’s instructions. Partial application of a field-applied grease duct enclosure shall not be installed for the sole purpose of reducing clearances to combustibles at isolated sections of grease duct. Exposed duct-wrap systems shall be protected where subject to physical damage.</p> <p>506.3.11.3 Factory-built grease duct enclosure assemblies. Factory-built grease ducts incorporating integral enclosure materials shall be listed and labeled for use as grease duct enclosure assemblies specifically evaluated for such purpose in accordance with UL 2221.</p> <p><u>Grease duct</u> Duct penetrations shall be protected with a through-penetration firestop system tested and listed in accordance with ASTM E814 or UL 1479 and having an "F" and "T" rating equal to the fire-resistance rating of the assembly being penetrated. The grease duct enclosure assembly and firestop system shall be installed in accordance with the listing and the manufacturer’s instructions.</p> <p>506.3.12 Grease duct fire-resistive access opening. Where cleanout openings are located in <u>grease</u> ducts within a fire-resistance-rated enclosure, access openings shall be provided in the enclosure at each cleanout point. Access openings shall be equipped with tightfitting sliding or hinged doors that are equal in fire-resistive protection to that of the shaft or enclosure. An approved sign shall be placed on access opening panels with wording as follows: “ACCESS PANEL. DO NOT OBSTRUCT.”</p> <p>506.3.13 Exhaust outlets serving Type I hoods. Exhaust outlets for grease ducts serving Type I hoods shall conform to the requirements of Sections 506.3.13.1 through 506.3.13.3.</p> <p>506.5.1.2 In-line fan location. Where enclosed <u>grease</u> duct systems are connected to in-line fans not located outdoors, the fan shall be located in a room or space having the same fire-resistance rating as the <u>grease</u> duct enclosure. Access shall be provided for servicing and cleaning of fan components. Such rooms or spaces shall be ventilated in accordance with the fan manufacturer’s installation instructions.</p> <p>506.5.2 Pollution-control units. The installation of pollution-control units shall be in accordance with all of the following:</p>					

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	<p>13. <u>Grease duct</u> Duct connections to pollution-control units shall be in accordance with Section 506.3.2.3. Where water splash or carryover can occur in the transition duct as a result of a washing operation, the transition duct shall slope downward toward the cabinet drain pan for a length not less than 18 inches (457 mm). <u>Grease duct</u> Duct shall transition to the full size of the unit’s inlet and outlet openings.</p> <p>506.5.4 Exhaust fan mounting. Upblast fans serving Type I hoods and installed in a vertical or horizontal position shall be hinged, supplied with a flexible weatherproof electrical cable to permit inspection and cleaning and shall be equipped with a means of restraint to limit the swing of the fan on its hinge. The <u>grease duct system</u> ductwork shall extend not less than 18 inches (457 mm) above the roof surface.</p> <p>507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall be designed to capture and confine cooking vapors and residues. A Type I or Type II hood shall be installed at or above appliances in accordance with Sections 507.2 and 507.3. Where any cooking appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed. Where a Type I hood is installed, the installation of the entire system, including the hood, <u>grease</u> ducts, exhaust equipment and makeup air system shall comply with the requirements of Sections 506, 507, 508 and 509.</p> <p>507.2.4 Type I supports. Type I hoods shall be secured in place by noncombustible supports. Type I hood supports shall be adequate for the applied load of the hood, the unsupported <u>grease duct system</u> ductwork, the effluent loading and the possible weight of personnel working in or on the hood.</p> <p>506.3.1.2 508.1.2 Makeup air ducts. Makeup air ducts connecting to or within 18 inches (457 mm) of a Type I hood shall be constructed and installed in accordance with Sections 603.1, 603.3, 603.4, 603.9, 603.10 and 603.12. Duct insulation installed within 18 inches (457 mm) of a Type I hood shall be noncombustible or shall be listed for the application.</p>					
M36-21	<p>Revised as follows:</p> <p>506.5.2 Pollution-control units. The installation of pollution-control units shall be in accordance with all of the following:</p>		X			The edits help to structure the paragraph

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	<p>1. Pollution-control units shall be listed and labeled in accordance with UL 8782.</p> <p>2. Fans serving pollution-control units shall be listed and labeled in accordance with UL 762.</p> <p>3. Bracing and supports for pollution-control units shall be of noncombustible material securely attached to the structure and designed to carry gravity and seismic loads within the stress limitations of the International Building Code.</p> <p>4. Pollution-control units located indoors shall be listed and labeled for such use. Where enclosed duct systems, as required by Section 506.3.11, are connected to a pollution control unit, such unit shall be listed and labeled, in accordance with UL 2221 or ASTM E2336, for location in an enclosure having the same fire-resistance rating as the duct enclosure. Access shall be provided for servicing and cleaning of the unit. The space or enclosure shall be ventilated in accordance with the manufacturer's installation instructions.</p> <p>5. <u>Clearances shall be maintained between the pollution-control unit and combustible material in accordance with the listing.</u> Where enclosed duct systems, as required by Section 506.3.11, are connected to a pollution control unit <u>installed indoors, all of the following shall apply:</u></p> <p><u>5.1. The unit shall be listed and labeled, in accordance with UL 2221 or ASTM E2336, for location in an enclosure.</u></p> <p><u>5.2. The unit shall be installed in a dedicated room or space enclosure, constructed as required by Section 506.3.11, having the same fire-resistance rating as the duct enclosure.</u></p> <p><u>5.3. Access shall be provided for servicing and cleaning of the unit.</u></p> <p><u>5.4. The dedicated room or space enclosure shall be ventilated in accordance with the manufacturer's installation instructions.</u></p> <p>56. Clearances shall be maintained between the pollution-control unit and combustible materials in accordance with the listing.</p> <p>67. Roof-mounted pollution-control units shall be listed for outdoor installation and shall be mounted not less than 18 inches (457 mm) above the roof.</p> <p>78. Exhaust outlets for pollution-control units shall be in accordance with Section 506.3.13.</p>					specific to cleaning purposes

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	<p>89. An airflow differential pressure control shall be provided to monitor the pressure drop across the filter sections of a pollution control unit. When the airflow is reduced below the design velocity, the airflow differential pressure control shall activate a visual alarm located in the area where cooking operations occur.</p> <p>910. Pollution-control units shall be provided with a factory-installed fire suppression system.</p> <p>1011. Service space shall be provided in accordance with the manufacturer’s instructions for the pollution control unit and the requirements of Section 306.</p> <p>1112. Wash-down drains shall discharge through a grease interceptor and shall be sized for the flow. Drains shall be sealed with a trap or other approved means to prevent air bypass. Where a trap is utilized it shall have a seal depth that accounts for the system pressurization and evaporation between cleanings.</p> <p>1213. Protection from freezing shall be provided for the water supply and fire suppression systems where such systems are subject to freezing.</p> <p>1314. Duct connections to pollution-control units shall be in accordance with Section 506.3.2.3. Where water splash or carryover can occur in the transition duct as a result of a washing operation, the transition duct shall slope downward toward the cabinet drain pan for a length not less than 18 inches (457 mm). Ducts shall transition to the full size of the unit’s inlet and outlet openings.</p> <p>1415. Extra-heavy-duty appliance exhaust systems shall not be connected to pollution-control units except where such units are specifically designed and listed for use with solid fuels.</p> <p>1516. Pollution-control units shall be maintained in accordance with the manufacturer’s instructions.</p>					
M38-21	<p>Revised as follows: 506.3.2.5 Grease duct test. A field test shall be performed <u>Prior</u> prior to the use or concealment of any portion of a grease duct system, a leakage test shall be performed. Ducts shall be considered to be concealed where installed in shafts or covered by coatings or wraps that prevent the ductwork from being visually inspected on all sides. The permit holder shall be responsible to provide the necessary equipment and perform</p>		X			The deleted lamp requirement is too arbitrary to meet

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	<p><u>the grease duct leakage test. A light test shall be performed to determine that all welded and brazed joints are liquid tight. A light test shall be performed by passing a lamp having a power rating of not less than 100 watts through the entire section of ductwork to be tested. The lamp shall be open so as to emit light equally in all directions perpendicular to the duct walls. A test shall be performed for the entire duct system, including the hood-to-duct connection. The duct work shall be permitted to be tested in sections, provided that every joint is tested. For listed factory-built grease ducts, this test shall be limited to duct joints assembled in the field and shall exclude factory welds. The test shall be performed in accordance with either Section 506.3.2.5.1 or Section 506.3.2.5.2.</u></p> <p>Add new text as follows:</p> <p>506.3.2.5.3.1 Light test. A duct test shall be performed by passing a lamp having not less than 1600 lumens, through the entire section of ductwork to be tested. The lamp shall be open so as to emit light equally in all directions perpendicular to the duct walls. A successful test shall be where the light from the lamp is not visible at any point on the exterior of the duct.</p> <p>506.3.2.5.2 Water spray test. A duct test shall be performed by simulating a cleaning operation, of the interior of the duct. A water pump, capable of a flowing outlet pressure of not less than 1200 psi (8,274 kPa) shall be used, along with any necessary hoses and spray nozzles, to apply high pressure water to the inside surfaces of the duct. A successful test shall be where there is no evidence of cleaning water at any point on the exterior of the duct.</p>					
M39-21	Replaced UL 762 with <u>UL 705</u> in IMC: 506.5.1, 506.5.2		X			The code update keeps current with UL code updates
M40-21	Revised as follows: 507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall be designed to capture and confine cooking vapors and residues. A Type I hood shall be installed at or above appliances <u>in accordance with Section 507.2.</u> or A Type II hood shall be		X			The code update clarified separate requirements for Type I hood and Type II hood.

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	<p>installed at or above appliances in accordance with Sections 507.2 and Section 507.3.</p> <p>Where any cooking appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed. Where a Type I hood is installed, the installation of the entire system, including the hood, ducts, exhaust equipment and makeup air system shall comply with the requirements of Sections 506, 507, and 508 and 509.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Factory-built commercial exhaust hoods that are listed and labeled in accordance with UL 710, and installed in accordance with Section 304.1, shall not be required to comply with Sections 507.1.5, <u>507.1.6</u>, 507.2.3, 507.2.5, 507.2.8, <u>507.2.10</u>, 507.3.1, <u>and 507.3.3</u>, 507.4 and 507.5. 2. Factory-built commercial cooking recirculating systems that are listed and labeled in accordance with UL 710B, and installed in accordance with Section 304.1, shall not be required to comply with Sections 507.1.5, 507.1.6 507.2.3, 507.2.5, 507.2.8, 507.2.10 507.3.1, and 507.3.3, 507.4 and 507.5. Spaces in which such systems are located shall be considered to be kitchens and shall be ventilated in accordance with Table 403.3.1.1. For the purpose of determining the floor area required to be ventilated, each individual appliance shall be considered as occupying not less than 100 square feet (9.3 m). 3. Where cooking appliances are equipped with integral down-draft exhaust systems and such appliances and exhaust systems are listed and labeled for the application in accordance with NFPA 96, a hood shall not be required at or above them. 4. Smoker ovens with integral exhaust systems, provided that the appliance is installed in accordance with the manufacturer's installation instructions, is listed and tested for the application, and complies with Chapter 5. <p>507.1.1 Operation. Commercial kitchen exhaust hood systems shall operate during the cooking operation. The hood exhaust rate shall comply with <u>either</u> the listing of the hood Section 507.2.10, <u>or shall comply with Section <u>507.3.4</u></u> 507.5. The exhaust fan serving a Type I hood shall have automatic controls that will activate the fan when any appliance that requires such Type I hood is turned on, or a means of interlock shall be provided that</p>					

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	<p>will prevent operation of such appliances when the exhaust fan is not turned on.</p> <p>507.1.2 Domestic cooking appliances used for commercial purposes. Domestic cooking appliances utilized for commercial purposes shall be provided with <u>either</u> Type I or Type II hoods as required for the type of appliances and processes in accordance with Sections 507.2 and 507.3. Domestic cooking appliances utilized for domestic cooking shall comply with Section 505.</p> <p>507.4 507.1.6 Hood size and location. Hoods shall comply with the overhang, setback and height requirements in accordance with Sections 507.4.1 <u>507.6.1</u> and 507.4.2 <u>507.1.6.2</u>, based on the type of hood.</p> <p>507.4.1 507.1.6.1 Canopy size and location. The inside lower edge of canopy-type Type I and II commercial hoods shall overhang or extend a horizontal distance of not less than 6 inches (152 mm) beyond the edge of the top horizontal surface of the appliance on all open sides.</p> <p>507.4.2 507.1.6.2 Noncanopy size and location. Noncanopy-type hoods shall be located not greater than 3 feet (914 mm) above the cooking surface. The edge of the hood shall be set back not greater than 1 foot (305 mm) from the edge of the cooking surface.</p> <p>507.6 507.1.7 Performance test. A performance test shall be conducted upon completion and before final approval of the installation of a ventilation system serving commercial cooking appliances. The test shall verify the rate of exhaust airflow required by Section 507.5 <u>507.2.10</u> or Section <u>507.3.4</u>, makeup airflow required by Section 508 and proper operation as specified in this chapter. The permit holder shall furnish the necessary test equipment and devices required to perform the tests.</p> <p>507.6.1 507.1.7.1 Capture and containment test. The permit holder shall verify capture and containment performance of the exhaust system. This field test shall be conducted with all appliances under the hood at operating temperatures, with all sources of outdoor air providing makeup air for the hood operating and with all sources of recirculated air providing conditioning for the space in which the hood is located operating. Capture and containment shall be verified visually by</p>					

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	<p>observing smoke or steam produced by actual or simulated cooking, such as that provided by smoke generators. .</p> <p>507.5.1 507.2.2.10.1 Extra-heavy-duty cooking appliances. The minimum net airflow for hoods, as determined by Section 507.1, used for extra-heavy-duty cooking appliances shall be determined as follows:</p> <p>.....</p> <p>507.5.2 507.2.2.10.2 Heavy-duty cooking appliances. The minimum net airflow for hoods, as determined by Section 507.1, used for heavy duty cooking appliances shall be determined as follows:</p> <p>.....</p> <p>507.5 507.2.10 Capacity of Type I hoods. Commercial food service hoods shall exhaust a minimum net quantity of air determined in accordance with this section and Sections 507.5.1 507.2.10.1 through 507.5.5 507.2.10.4. The net quantity of exhaust air shall be calculated by subtracting any airflow supplied directly to a hood cavity from the total exhaust flow rate of a hood. Where any combination of heavy-duty, medium-duty and light-duty cooking appliances are utilized under a single hood, the exhaust rate required by this section for the heaviest duty appliance covered by the hood shall be used for the entire hood.</p> <p>509.1 507.2.11 Where required Fire suppression systems. Cooking appliances required by Section 507.2 to have A Type I hood shall be provided with an approved automatic fire suppression system complying with <u>Section 904.12</u> of the International Building Code and the International Fire Code.</p> <p>507.3 Type II hoods. Type II hoods shall be installed above <u>light-duty cooking appliances</u> dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process, except where the heat and moisture loads from such appliances are incorporated into the HVAC system design or into the design of a separate removal system. Type II hoods shall be installed above all appliances that produce products of combustion and do not produce grease or smoke as a result of the cooking process. Spaces containing cooking appliances that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per</p>					

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	<p>square foot (0.00356 m / (s • m)). For the purpose of determining the floor area required to be exhausted, each individual appliance that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet (9.3 m). Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot [0.00356 m / (s • m)].</p> <p>Add new text as follows: 507.3.4 Capacity of Type II hoods. Type II hoods shall exhaust a <u>minimum net quantity of air determined in accordance with this section and Sections 507.3.4.1 through 507.3.4.2. The net quantity of exhaust air shall be calculated by subtracting any airflow supplied directly to a hood cavity from the total exhaust flow rate of a hood.</u></p> <p>Revise as follows: 507.5.4 507.3.4.1 Light-duty cooking appliances. The minimum net airflow for hoods, as determined by Section 507.1, used for light-duty cooking appliances and food service preparation shall be determined as follows: </p> <p>507.5.5 507.3.4.2 Dishwashing appliances. The minimum net airflow for Type II hoods used for dishwashing appliances shall be 100 cfm per linear foot (155 L/s per linear meter) of hood length.</p> <p>Exception: Dishwashing appliances and equipment installed in accordance with Section 507.3.</p>					
M41-21	<p>Revised as follows: 507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall be designed to capture and confine cooking vapors and residues. A Type I or Type II hood shall be installed at or above appliances in accordance with Sections 507.2 and 507.3. Where any cooking appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed. Where a Type I hood is installed, the installation of the entire system, including the hood, ducts, exhaust equipment and makeup air system shall comply with the requirements of Sections 506, 507, 508 and 509.</p> <p>Exceptions:</p>		X			The code addition allows Type II hoods for Type I hoods application, without the fire suppression system and grease filter requirement.

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	<p>1. - 4.</p> <p>507.3 Type II hoods. Type II hoods shall be installed above dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process, except where the heat and moisture loads from such appliances are incorporated into the HVAC system design or into the design of a separate removal system. Type II hoods shall be installed above all appliances that produce products of combustion and do not produce grease or smoke as a result of the cooking process. <u>A Type I hood shall be permitted to be installed for a required Type II hood provided that the Type I hood installation complies with all of the requirements for a Type I hood installation.</u> Where such a Type I hood serves only <u>dishwashers and appliances that require a Type II hood, the Type I hood shall not be required to have fire suppression or grease filters.</u> Spaces containing cooking appliances that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per square foot (0.00356 m³/(s • m²)). For the purpose of determining the floor area required to be exhausted, each individual appliance that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet (9.3 m²). Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot [0.00356 m³/(s • m²)].</p>					
M42-21	<p>Revised as follows:</p> <p>507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall be designed to capture and confine cooking vapors and residues. A Type I or Type II hood shall be installed at or above appliances in accordance with Sections 507.2 and 507.3. Where any cooking appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed. Where a Type I hood is installed, the installation of the entire system, including the hood, ducts, exhaust equipment and makeup air system shall comply with the requirements of Sections 506, 507, 508 and 509.</p> <p>Exceptions:</p> <p>1. Factory-built commercial exhaust hoods that are listed and labeled in accordance with UL 710, and installed in</p>		X			Clarification

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	<p>accordance with Section 304.1, shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4 and 507.5.</p> <p>2. <u>A hood shall not be required at or above any of the following:</u></p> <p> 22.1. Factory-built commercial cooking recirculating systems that are listed and labeled in accordance with UL 710B, and installed in accordance with Section 304.1, shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4 and 507.5. Spaces in which such systems are located shall be considered to be kitchens and shall be ventilated in accordance with Table 403.3.1.1. For the purpose of determining the floor area required to be ventilated, each individual appliance shall be considered as occupying not less than 100 square feet (9.3 m2).</p> <p> 3 2.2. Where cooking appliances are equipped with integral down-draft exhaust systems and such appliances and exhaust systems are listed and labeled for the application in accordance with NFPA 96, a hood shall not be required at or above them.</p> <p> 4-2.3. Smoker ovens with integral exhaust systems, provided that the appliance is installed in accordance with the manufacturer's installation instructions, is are listed and tested for the application, and complies with Chapter 5.</p>					
M43-21	<p>Added as follows:</p> <p>507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall</p> <p>Exceptions:</p> <p> 5. <u>Ovens listed and labeled for use with wood fuel in accordance with UL 2162 and vented in accordance with the manufacturer's instructions.</u></p>		X			Recognizes that UL 2162 is an alternative for solid fuel-fired ovens exhaust systems.
M44-21	<p>Added as follows:</p> <p>507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall</p> <p>Exceptions:</p>		X			Provides alternative solution. Recognizes that UL 197 is

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>5. <u>An electric cooking appliance listed and labeled in accordance with UL 197 for reduced grease emissions.</u></p> <p>507.2 Type I hoods. Type I hoods shall be installed where cooking appliances produce grease or smoke as a result of the cooking process. Type I hoods shall be installed over medium-duty, heavy-duty and extra-heavy-duty cooking appliances. Exception: A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m or less of grease when tested at an exhaust flow rate of 500 cfm (0.236m²/s) in accordance with UL 710B.</p>					an alternative for electric cooking appliance.
M45-21	<p>Added as follows:</p> <p>507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall</p> <p>Exceptions:</p> <p>5. <u>Commercial electric dishwashers incorporating a self-contained condensing system listed and labeled in accordance with UL 921.</u></p>		X			Removes redundant requirement of hood above a UL 921 dishwasher
M46-21	<p>Revised as follows:</p> <p>507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall</p> <p>Exceptions:</p> <p><u>Where the heat and moisture loads from dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process are incorporated into the HVAC system design or into the design of a separate removal system. Spaces containing such cooking appliances that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per square foot (0.00356 m3/(s • m2). For the purpose of determining the floor area required to be exhausted, each individual appliance that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet (9.3 m2). Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot [0.00356 m3/(s • m2)].</u></p>		X			Provides an alternative to the provision of Type II hoods for specific appliances The exception was already part of the code under a different section. The code update organized it in a better editorial order

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>507.3 Type II hoods. Type II hoods shall be installed above dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process, except where the heat and moisture loads from such appliances are incorporated into the HVAC system design or into the design of a separate removal system. Type II hoods shall be installed above all appliances that produce products of combustion and do not produce grease or smoke as a result of the cooking process. Spaces containing cooking appliances that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per square foot (0.00356 m³/(s • m)). For the purpose of determining the floor area required to be exhausted, each individual appliance that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet (9.3 m²). Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot [0.00356 m³/(s • m)].</p> <p>507.5.5 Dishwashing appliances. The minimum net airflow for Type II hoods used for dishwashing appliances shall be 100 cfm per linear foot (155 L/s per linear meter) of hood length.</p> <p>Exception: Dishwashing appliances and equipment installed in accordance with Section 507.3.</p>					
M47-21	<p>Deleted and substituted as follows:</p> <p>507.1.3 Fuel-burning appliances. Where vented fuel-burning appliances are located in the same room or space as the hood, provisions shall be made to prevent the hood system from interfering with normal operation of the appliance vents.</p> <p><u>507.1.3 Fuel-burning appliances. Appliances equipped with draft hoods or atmospheric burners shall not be located in the same room or space containing a Type I or Type II hood except where the appliance is located in a sealed enclosure equipped with a self-closing device with combustion air obtained from the outdoors or from other spaces in the building in accordance with Chapter 7 or the International Fuel Gas code.</u></p>		X			The code update prohibits fuel burning appliance to be located in the same room with Tyler I or Tyler II hoods, to prevent interference of normal operation.
M49-21	<p>Deleted and substituted as follows:</p> <p>508.1.1 Makeup air temperature. The temperature differential between makeup air and the air in the conditioned space shall not exceed 10°F (6°C) except where the added heating and</p>		X			Clarification

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>cooling loads of the makeup air do not exceed the capacity of the HVAC system.</p> <p>508.1.1 Makeup air temperature. HVAC systems that serve the kitchen space shall have the additional capacity necessary for the latent and sensible loads that are introduced by the makeup air supplied to the kitchen space, or the makeup air shall be conditioned by dedicated systems such that the difference in temperature between the makeup air supplied to the kitchen space and the design setpoint temperature in the kitchen space is not greater than 10 degrees F (6 degrees C).</p> <p>Exception: Makeup air supplied to a compensating hood shall not be required to be conditioned.</p>					
M51-21	<p>Revised as follows:</p> <p>601.5 Return air openings. Return air openings for heating, ventilation and air-conditioning systems shall comply with all of the following:</p> <ol style="list-style-type: none"> Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another appliance located in the same room or space. Return air <u>for heating or air-conditioning systems</u> shall not be taken from a hazardous or insanitary location or a refrigeration room as defined in this code. The amount of return air taken from any room or space shall be not greater than the flow rate of supply air delivered to such room or space. Return and transfer openings shall be sized in accordance with the appliance or equipment manufacturer’s installation instructions, ACCA Manual D or the design of the registered design professional. Return air taken from one dwelling unit shall not be discharged into another dwelling unit. Taking return air from a crawl space shall not be accomplished through a direct connection to the return side of a forced air furnace. Transfer openings in the crawl space enclosure shall not be prohibited. Return air <u>for heating or air-conditioning systems</u> shall not be taken from a closet, bathroom, toilet room, kitchen, garage, boiler room, furnace room or unconditioned attic. 		X			Clarified intent

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>8. Return air <u>for heating or air-conditioning systems</u> shall not be taken from indoor swimming pool enclosures and associated deck areas.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where the air from such spaces is dehumidified in accordance with Section 403.2.1, Item 2. Dedicated HVAC systems serving only such spaces. <p>Exceptions:</p> <ol style="list-style-type: none"> Taking return air <u>for heating or air-conditioning systems</u> from a kitchen is not prohibited where such return air openings serve the kitchen and are located not less than 10 feet (3048 mm) from the cooking appliances. Taking return air <u>for heating or air-conditioning systems</u> from a kitchen is not prohibited in a dwelling unit where the kitchen and living spaces are in a single room and the cooking appliance is electric and located not less than 5 feet (1524 mm) in any direction from the return air intake opening. Dedicated forced air systems serving only the garage shall not be prohibited from obtaining return air from the garage. 					
M53-21	<p>Revised as follows:</p> <p>601.5 Return air openings. Return air openings for heating, ventilation and air-conditioning systems shall comply with all of the following:</p> <ol style="list-style-type: none"> Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another appliance located in the same room or space. Return air shall not be taken from a hazardous or insanitary location or a refrigeration room as defined in this code. The amount of return air taken from any room or space shall be not greater than the flow rate of supply air delivered to such room or space. Return and transfer openings shall be sized in accordance with the appliance or equipment manufacturer’s installation instructions, ACCA Manual D or the design of the registered design professional. Return air taken from one dwelling unit shall not be discharged into another dwelling unit. Taking return air from a crawl space shall not be accomplished through a direct connection to the return side of 			X	<p>Add \$250 for undercutting or Grille for Wood Door Add \$500 for custom undercutting or Grilling for Hollow Metal Door</p>	<p>Provides a means of controlling closet moisture levels. The code specified that a dedicated closet supply duct is not required, which simplifies design.</p>

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>a forced air furnace. Transfer openings in the crawl space enclosure shall not be prohibited.</p> <p>7. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, boiler room, furnace room or unconditioned attic.</p> <p><u>8. Return air from a closet shall serve only the closet and shall not require a dedicated closet supply duct.</u></p> <p><u>9. Return air taken from a closet smaller than 30 ft (2.8 m) shall require the closet door be undercut not less than 1 / inches (38 mm), or be either a louvered door or include an air transfer grille both having a net free area of not less than 30 in (19355 m²)</u></p> <p>8-10. Return air shall not be taken from indoor swimming pool enclosures and associated deck areas.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where the air from such spaces is dehumidified in accordance with Section 403.2.1, Item 2. Dedicated HVAC systems serving only such spaces. <p>Exceptions:</p> <ol style="list-style-type: none"> Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen and are located not less than 10 feet (3048 mm) from the cooking appliances. Taking return air from a kitchen is not prohibited in a dwelling unit where the kitchen and living spaces are in a single room and the cooking appliance is electric and located not less than 5 feet (1524 mm) in any direction from the return air intake opening. Dedicated forced air systems serving only the garage shall not be prohibited from obtaining return air from the garage. 					
M55-21	<p>Revised as follows:</p> <p>602.1 General. Supply, return, exhaust, relief and ventilation air plenums shall be in <u>accordance with this section.</u> limited to uninhabited crawl spaces, areas above a ceiling or below the floor, attic spaces, mechanical equipment rooms and the framing cavities addressed in Section 602.3. Plenums shall be limited to one fire area. Air systems shall be ducted from the boundary of the fire area served directly to the air handling equipment. Fuel-fired appliances shall not be installed within a plenum.</p> <p>Add new text as follows:</p>		X			Clarifies what materials are permitted within a plenum under specific conditions.

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>602.1.1 Locations limited. Plenums shall be limited to <u>uninhabited crawl spaces, above a ceiling or below the floor, attic spaces, mechanical equipment rooms and the framing cavities addressed in Section 602.2.</u></p> <p>602.1.2 Limited to a fire area. Plenums shall be limited to <u>one fire area. Air systems shall be ducted from the boundary of the fire area served directly to the air-handling equipment.</u></p> <p>602.1.3 Fuel fired appliances. Fuel-fired appliances shall not be <u>installed within a plenum.</u></p> <p>Revise as follows:</p> <p>602.2 Construction of plenums. Plenum enclosure construction materials that are exposed to the airflow shall comply with the requirements of Section 703.3 of the International Building Code or such materials shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723. The use of gypsum boards to form plenums shall be limited to systems where the air temperatures do not exceed 125°F (52°C) and the building and mechanical system design conditions are such that the gypsum board surface temperature will be maintained above the airstream dew-point temperature. Supply air plenums formed by gypsum boards shall not be incorporated in air-handling systems utilizing direct evaporative cooling systems.</p> <p>602.3 602.2.1 Stud cavity and joist space plenums. Stud wall cavities and the spaces between solid floor joists to be utilized as air plenums shall comply with the following conditions:</p> <ol style="list-style-type: none"> Such cavities or spaces shall not be utilized as a plenum for supply air. Such cavities or spaces shall not be part of a required fire-resistance-rated assembly. Stud wall cavities shall not convey air from more than one floor level. Stud wall cavities and joist space plenums shall comply with the floor penetration protection requirements of the international Building Code. Stud wall cavities and joist space plenums shall be isolated from adjacent concealed spaces by approved fireblocking as required in the International Building Code. 					

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>6. Stud wall cavities in the outside walls of building envelope assemblies shall not be utilized as air plenums. Delete without substitution:</p> <p>602.2.1.4 Electrical equipment in plenums. Electrical equipment exposed within a plenum shall comply with Sections 602.2.1.4.1 and 602.2.1.4.2.</p> <p>602.2.1.4.1 Equipment in metallic enclosures. Electrical equipment with metallic enclosures exposed within a plenum shall be permitted.</p> <p>602.2.1.4.2 Equipment in combustible enclosures. Electrical equipment with combustible enclosures exposed within a plenum shall be listed and labeled for such use in accordance with UL 2043.</p> <p>Revise as follows:</p> <p>602.2.1 602.3 Materials within plenums. Except as required by Sections 602.2.1.1 through 602.2.1.8, <u>Materials within plenums shall be noncombustible or shall be in compliance with the applicable requirements in Sections 602.3.1 through 602.3.10.</u> listed and labeled as having a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723.</p> <p>Exceptions: <u>This section shall not apply to the following:</u></p> <ol style="list-style-type: none"> 1. Rigid and flexible ducts and connectors shall conform to Section 603. Materials exposed within plenums in one and two family dwellings. 2. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604. Combustible materials fully enclosed within one of the following: 3. This section shall not apply to materials exposed within plenums in one and two family dwellings. 4. This section shall not apply to smoke detectors. 5. Combustible materials fully enclosed within one of the following: <ol style="list-style-type: none"> 5.1. 2.1 Continuous noncombustible raceways or enclosures. 5.2. 2.2 Approved gypsum board assemblies. 5.3. 2.3 Materials listed and labeled for installation within a plenum and listed for the application. 6.3. Materials in Group H, Division 5 fabrication areas and the areas above and below the fabrication area that share a common air recirculation path with the fabrication area. 					

Table 1. 2024 IMC Changes Cost Impact

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>Add new text as follows:</p> <p>602.3.1 Ducts, connectors, duct coverings, linings, and tape. Rigid and flexible ducts and connectors shall conform to Section 603. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604.</p> <p>602.3.2 Smoke detectors. Smoke detectors shall be listed and labeled.</p> <p>Revise as follows:</p> <p>602.2.1.1 602.3.3 Wiring. Combustible electrical wires and cables and optical fiber cables exposed within a plenum shall be listed and labeled as having a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread distance not greater than 5 feet (1524 mm) when tested in accordance with NFPA 262, or shall be installed in metal raceways or metal sheathed cable. Combustible optical fiber and communication raceways exposed within a plenum shall be listed and labeled as having a peak optical density not greater than 0.5, an average optical density not greater than 0.15, and a flame spread distance not greater than 5 feet (1524 mm) when tested in accordance with UL 2024. Only plenum-rated wires and cables shall be installed in plenum-rated raceways.</p> <p>602.2.1.2 602.3.4 Fire sprinkler piping. Plastic fire sprinkler piping exposed within a plenum shall be used only in wet pipe systems and shall be listed and labeled as having a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread distance not greater than 5 feet (1524 mm) when tested in accordance with UL 1887.</p> <p>602.2.1.3 602.3.5 Pneumatic tubing. Combustible pneumatic tubing exposed within a plenum shall be listed and labeled as having a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread distance not greater than 5 feet (1524 mm) when tested in accordance with UL 1820.</p> <p>602.2.1.5 602.3.6 Discrete electrical, plumbing and mechanical products in plenums. Where discrete electrical, plumbing and mechanical products and appurtenances are located in a plenum and have exposed combustible material, they shall be listed and labeled for such use in accordance with UL 2043.</p>					

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>Exception: Electrical equipment with metallic enclosures exposed within a plenum.</p> <p>602.2.1.6 602.3.7 Foam plastic in plenums as interior finish or interior trim. Foam plastic in plenums used as interior wall or ceiling finish or interior trim shall exhibit a flame spread index of 25 or less and a smoke-developed index of 50 or less when tested in accordance with ASTM E84 or UL 723 at the maximum thickness and density intended for use, and shall be tested in accordance with NFPA 286 and meet the acceptance criteria of Section 803.1.2 of the International Building Code. As an alternative to testing to NFPA 286, the foam plastic shall be approved based on tests conducted in accordance with Section 2603.9 of the International Building Code.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Foam plastic in plenums used as interior wall or ceiling finish or interior trim shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL 723 at the maximum thickness and density intended for use, where it is separated from the airflow in the plenum by a thermal barrier complying with Section 2603.4 of the International Building Code. 2. Foam plastic in plenums used as interior wall or ceiling finish or interior trim, shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL 723 at the maximum thickness and density intended for use, where it is separated from the airflow in the plenum by corrosion-resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm). 3. Foam plastic in plenums used as interior wall or ceiling finish or interior trim, shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL 723 at the maximum thickness and density intended for use, where it is separated from the airflow in the plenum by not less than a 1-inch (25 mm) thickness of masonry or concrete. <p>602.2.1.7 602.3.8 Plastic plumbing piping and tubing. Plastic piping and tubing used in plumbing systems shall be listed and labeled as having a flame spread index not greater than 25 and</p>					

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	<p>a smoke-developed index not greater than 50 when tested in accordance with ASTM E84 or UL 723.</p> <p>Exception: Plastic water distribution piping and tubing listed and labeled in accordance with UL 2846 as having a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread distance not greater than 5 feet (1524 mm), and installed in accordance with its listing.</p> <p>602.2.1.8 602.3.9 Pipe and duct insulation within plenums. Pipe and duct insulation contained within plenums, including insulation adhesives, shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723, using the specimen preparation and mounting procedures of ASTM E2231. Pipe and duct insulation shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F (121°C). Pipe and duct insulation shall be listed and labeled. Pipe and duct insulation shall not be used to reduce the maximum flame spread and smoke-developed indices except where the pipe or duct and its related insulation, coatings, and adhesives are tested as a composite assembly in accordance with Section 602.2.1.7 602.3.9.</p> <p>Add new text as follows:</p> <p>602.3.10 Other combustible materials. <u>Other combustible materials not covered by Section 602.3 shall be listed and labeled as having a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723.</u></p> <p>602.3.1 Ducts, connectors, duct coverings, linings, and tape. <u>Rigid and flexible ducts and connectors shall conform to Section 603. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604.</u></p> <p>602.3.2 Smoke detectors. <u>Smoke detectors shall be listed and labeled.</u></p>					
M60-21	<p>Revised as follows:</p> <p>604.3 Coverings and linings. Duct coverings <u>and linings</u>, including adhesives where used, shall have a flame spread index not more than 25 and a smoke-developed index not more than 450 50, when tested in accordance with ASTM E84 or UL 723,</p>		X			The edits helps the code be more concise as consolidating

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>using the specimen preparation and mounting procedures of ASTM E2231. Duct coverings and linings shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. <u>The test temperature shall not fall below 250°F (121°C). Coverings and linings</u> Linings shall be listed and labeled.</p> <p>Duct linings, including adhesives where used, shall have a flame spread index not more than 25 and a smoke-developed index not more Committee Action As Modified than 50, when tested in accordance with ASTM E84 or UL 723, using the specimen preparation and mounting procedures of ASTM E2231. Duct coverings and linings shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F (121°C). Linings shall be listed and labeled.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Polyurethane foam insulation that is spray applied to the exterior of ducts in attics and crawl spaces shall be subject to all of the following requirements: <ol style="list-style-type: none"> 1. The foam plastic insulation shall have a flame spread index not greater than 25 and a smoke-developed index not greater than 450, when tested in accordance with ASTM E84 or UL 723, using the specimen preparation and mounting procedures of ASTM E2231. 2. The foam plastic insulation shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F (121°C). 3. The foam plastic insulation complies with the requirements of Section 2603 of the International Building Code. 4. The foam plastic insulation is protected against ignition in accordance with the requirements of Section 2603.4.1.6 of the International Building Code. 2. Ductwork <u>Duct coverings added to the outside of ducts and not contained in plenums and linings, including adhesives where used, located in a plenum-rated cavity,</u> shall have a flame spread index not more than 25 and a smoke-developed index not more than <u>450</u> 50, when tested in accordance with ASTM E84 or UL 723, using the specimen preparation and 					duct covering and lining requirements.

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Sub Code:						
	mounting procedures of ASTM E2231. Duct coverings and linings shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F (121°C). Coverings and linings shall be listed and labeled.					
M61-21	<p>Revise as follows:</p> <p>912 INFRARED RADIANT ELECTRIC SPACE HEATERS</p> <p>912.1 General. Permanently installed electric infrared radiant space heaters shall comply be listed and labeled in accordance with UL 499 <u>UL 2021</u>, and installed in accordance with the manufacturer’s instructions.</p> <p>912.3 Clearances. Heaters shall be installed with clearances from combustibile material in accordance with the manufacturer’s installation instructions.</p> <p>912.2 Support. <u>Infrared radiant Electric space heaters shall be fixed in a position independent of fuel and electric supply lines. Hangers and brackets shall be noncombustible material.</u></p>		X			Clarification
M62-21	<p>Add the following definition:</p> <p><u>STEAM BATH EQUIPMENT</u></p> <p><u>Includes steam bath generators, combination room and steam generator systems, and steam bath cabinets intended for high-humidity concentrated heating at elevated temperatures for personal bathing</u></p> <p>Add new text as follows:</p> <p><u>931 Steam Bath Equipment</u></p> <p><u>931.1 General.</u> Steam bath equipment shall be listed and labeled in accordance with UL 499 and shall be installed in accordance with their listing and the manufacturer’s instructions.</p>		X			Clarification
M63-21	<p>Revise as follows:</p> <p>1001.1 Scope. This chapter shall govern the installation, alteration and repair of boilers, water heaters and pressure vessels.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Pressure vessels used for unheated water supply. 2. Portable unfired pressure vessels and Interstate Commerce Commission containers. 3. Containers for bulk oxygen and medical gas. 		X			Clarification

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Sub Code:						
	<p>4. Unfired pressure vessels having a volume of 5 cubic feet (0.14 m³) or less operating at pressures not exceeding 250 pounds per square inch (psi) (1724 kPa) and located within occupancies of Groups B, F, H, M, R, S and U.</p> <p>5. Pressure vessels used in refrigeration systems that are regulated by Chapter 11 of this code.</p> <p>6. Pressure tanks used in conjunction with coaxial cables, telephone cables, power cables and other similar humidity control systems.</p> <p>7. Any boiler or pressure vessel subject to inspection by federal or state inspectors.</p> <p>8. <u>Pressure vessels used in specific appliances and equipment that are regulated by Chapter 9 of this code.</u></p>					
M64-21	<p>Add new text as follows:</p> <p><u>1002.4 Water heater pan required.</u> <u>Where a storage type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed by one of the following:</u></p> <p>1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.</p> <p>2. Plastic of not less than 0,036 inch (0.9 mm) in thickness <u>constructed of material having a flame spread index of 25 or less and a smoked developed index of 450 or less when tested in accordance with ASTM E84 or UL723.</u></p> <p>3. Other approved materials.</p> <p>4. A plastic pan installed beneath a water heater shall be constructed of material having a flame spread index of 25 or less and a smoked developed index of 450 or less when tested in accordance with ASTM E-84 or UL-723</p>		X		Consistency with other ICC codes.	
M65-21	<p>Revise as follows:</p> <p>1006.6 Safety and relief valve discharge. Safety and relief valve discharge pipes shall be of rigid pipe that is approved for the temperature of the system. High-pressure-steam safety valves shall be vented to the outside of the structure. The discharge piping serving pressure relief valves, temperature relief valves and combinations of such valves shall:</p> <p>...</p> <p>7. Discharge to a termination point that is readily visible and observable by the building occupants. <u>If the discharge termination point is not readily visible and observable, a</u></p>		X		Update gave additional option for the termination point.	

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<u>device for leak detection monitoring with alarm notification (and not automatic shut-off) is required.</u>					
M66-21 Part 1	<p>Revise as follows:</p> <p>1006.6 Safety and relief valve discharge. Safety and relief valve discharge pipes shall be of rigid pipe that is approved for the temperature of the system. High-pressure-steam safety valves shall be vented to the outside of the structure. The discharge piping serving pressure relief valves, temperature relief valves and combinations of such valves shall:</p> <p>...</p> <p>10. Terminate not more than 6 inches (152 mm) and not less than two times the discharge pipe diameter above the floor or flood level rim of the waste receptor.</p>		X			Clarification.
M67-21	<p>Revise as follows:</p> <p>1006.6 Safety and relief valve discharge. Safety and relief valve discharge pipes shall be of rigid pipe that is approved for the temperature of the system. High-pressure-steam safety valves shall be vented to the outside of the structure. The discharge piping serving pressure relief valves, temperature relief valves and combinations of such valves shall:</p> <p>...</p> <p>13. Be constructed of those materials listed in Section 605.4 of the International Plumbing Code or materials tested, rated and approved for such use in accordance with ASME A112.4.1. Utilize piping material complying with Section 1202.</p>	X			Decreases pipe cost by 15%	Allows use of black steel pipe instead of galvanized piping for relief valve discharge.
M68-21	<p>Revise as follows:</p> <p>1101.1 Scope. This chapter shall govern the design, installation, construction and repair of refrigeration systems that vaporize and liquefy a fluid during the refrigerating cycle. Permanently installed refrigerant storage systems and other components shall be considered as part of the refrigeration system to which they are attached.</p> <p>1101.6 Maintenance. Mechanical Refrigeration systems shall be maintained in proper operating condition, free from accumulations of oil, dirt, waste, excessive corrosion, other debris and leaks.</p> <p>Delete without substitution: REFRIGERATION SYSTEM, MECHANICAL. A combination of interconnected refrigeration-containing parts constituting one closed refrigerant circuit in which a refrigerant is circulated for</p>		X			Clarification & simplification

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE				
		Decrease	Neutral	Increase						
Sub Code:										
	the purpose of extracting heat and in which a compressor is used for compressing the refrigerant vapor.									
M69-21	Revise as follows: 1101.1.1 Refrigerants other than ammonia. Refrigerant piping design and installation for systems containing a refrigerant other than ammonia, including pressure vessels and pressure relief devices, shall comply with this chapter and ASHRAE 15. Refrigeration systems containing carbon dioxide as the refrigerant shall also comply with BSR/IIAR CO2.		X			Mandates industry good practice for carbon dioxide systems				
M70-21	Revise as follows: 1101.1.2 Ammonia refrigerant. Refrigeration systems using ammonia as the refrigerant shall comply with IIAR 2, IIAR 3, IIAR 4, and IIAR 5, and IIAR 6 and shall not be required to comply with this chapter.		X			Improves safety.				
M71-21	Revise as follows: TABLE 1101.2 FACTORY-BUILT EQUIPMENT AND APPLIANCES <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">EQUIPMENT</th> <th style="width:50%;">STANDARDS</th> </tr> </thead> <tbody> <tr> <td>Refrigeration fittings, including press-connect, flared and threaded</td> <td>UL-109 and UL-207</td> </tr> </tbody> </table>	EQUIPMENT	STANDARDS	Refrigeration fittings, including press-connect, flared and threaded	UL-109 and UL-207		X			Editorial change.
EQUIPMENT	STANDARDS									
Refrigeration fittings, including press-connect, flared and threaded	UL-109 and UL-207									
M72-21	Add new text as follows: 1101.2.1 Group A2L, A2, A3 and B1 high probability equipment. High probability equipment using Group A2L, A2, A3, or B1 refrigerant shall comply with UL 484, UL/CSA 60335-2-40, or UL/CSA 60335-2-89.		X			Clarification.				
M73-21	Add new definition as follows: 202 Refrigerant Designation. The unique identifying alphanumeric value or refrigerant number assigned to an individual refrigerant and published in ASHRAE Standard 34. Delete and substitute as follows: 1101.7 Change in refrigerant type. The type of refrigerant in refrigeration systems having a refrigerant circuit containing more than 220 pounds (99.8 kg) of Group A1 or 30 pounds (13.6 kg) of any other group refrigerant shall not be changed without prior notification to the code official and compliance with the applicable code provisions for the new refrigerant type. 1101.7 Changing Refrigerant. Changes of refrigerant in an existing system to a refrigerant with a different refrigerant designation shall only be allowed where in accordance with the following: 1. The owner or the owner's authorized agent shall be notified prior to making a change of refrigerant, and the change of		X			Clarification.				

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p><u>refrigerant shall not be made where the owner objects to the change.</u></p> <p><u>2. The change in refrigerant shall be in accordance with one of the following.</u></p> <p><u>2.1 Written instructions of the original equipment manufacturer.</u></p> <p><u>2.2 An evaluation of the system by a registered design professional or by an approved agency that validates safety and suitability of the replacement refrigerant.</u></p> <p><u>2.3 Approved by the code official.</u></p> <p><u>3. Where the replacement refrigerant is classified into the same safety group, requirements that were applicable to the existing system shall continue to apply.</u></p> <p><u>4. Where the replacement refrigerant is classified into a different safety group, the system shall comply with the requirements of this standard for a new installation, and the change of refrigerant shall require code official approval.</u></p> <p>1102.2.1 Mixing. Refrigerants, including refrigerant blends, with different designations in ASHRAE 34 shall not be mixed in a system.</p> <p>Exception: Addition of a second refrigerant is allowed where permitted by the equipment or appliance manufacturer to improve oil return at low temperatures. The refrigerant and amount added shall be in accordance with the manufacturer's instructions.</p> <p>1102.2.1 Mixing. <u>Refrigerants with different refrigerant designations shall only be mixed in a system in accordance with both of the following:</u></p> <p><u>1. The addition of a second refrigerant is allowed by the equipment manufacturer and is in accordance with the manufacturer's written instructions.</u></p> <p><u>2. The resulting mixture does not change the refrigerant safety group.</u></p>					
M74-21	Revisions of TABLE 1103.1 REFRIGERANT CLASSIFICATION, AMOUNT AND OEL		X			New refrigerants added from ASHRAE 34-2019
M75-21	Revise as follows:		X			Clarification.

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>1104.3.1 Air conditioning for human comfort. High probability systems used for human comfort shall use Group A1 or A2L refrigerant.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Listed equipment <u>Equipment listed for and used in residential occupancies containing a maximum of 6.6 pounds (3 kg) of refrigerant.</u> Listed equipment <u>Equipment listed for and used in commercial occupancies containing a maximum of 22 pounds (10 kg) of refrigerant.</u> Industrial occupancies. <p>1104.3.2 Group A2, A3, B2 and B3 refrigerants. <u>Group A2 and B2 refrigerants shall not be used in high-probability systems. Group A3 and B3 refrigerants shall not be used except where approved.</u></p> <p>Exceptions: This section does not apply to:</p> <ol style="list-style-type: none"> Laboratories where the floor area per occupant is not less than 100 square feet (9.3 m2). Listed self-contained systems having a maximum of 0.331 pounds (150 g) of Group A3 refrigerant. Industrial occupancies. <u>Equipment listed for and used in residential occupancies containing a maximum of 6.6 pounds (3 kg) of Group A2 or B2 refrigerant.</u> <u>Equipment listed for and used in commercial occupancies containing a maximum of 22 pounds (10 kg) of Group A2 or B2 refrigerant.</u> <p>Delete without substitution: TABLE 1104.3.2 MAXIMUM PERMISSIBLE QUANTITIES OF REFRIGERANTS</p>					
M77-21 Part I	<p>Revise as follows:</p> <p>1106.3 Flammable Class 2 and 3 refrigerants. Where refrigerants of Groups A2, A3, B2 and B3 are used, the machinery room shall conform to the Class I, Division 2, hazardous location classification requirements of NFPA 70.</p> <p>Exception: Machinery rooms for systems containing Group A2L refrigerants that are provided with ventilation in accordance with Section 1106.4</p>		X			Editorial
M78-21 Part I	Delete and substitute as follows:		X			Clarification.

Table 1. 2024 IMC Changes Cost Impact

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		Decrease	Neutral	Increase																	
Sub Code:																					
	<p>1106.4 Special requirements for Group A2L refrigerant machinery rooms. Machinery rooms with systems containing Group A2L refrigerants that do not conform to the Class I, Division 2, hazardous location electrical requirements of NFPA 70, as permitted by the exception to Section 1106.3, shall comply with Sections 1106.4.1 through 1106.4.3.</p> <p>Exception: Machinery rooms conforming to the Class I, Division 2, hazardous location classification requirements of NFPA 70 are not required to comply with Sections 1106.4.1 and 1106.4.2.</p> <p>1106.4 Group A2L and B2L Refrigerant. Machinery rooms for Group A2L and B2L refrigerant shall comply with Sections 1106.4.1 through Section 1106.4.3.</p> <p>Add new text as follows:</p> <p>1106.4.1 Elevated Temperatures. Open flame-producing devices or continuously operating hot surfaces over 1290 °F (700 °C) shall not be permanently installed in the room.</p> <p>Delete and substitute as follows:</p> <p>1106.4.2 Emergency ventilation system. An emergency ventilation system shall be provided at the minimum exhaust rate specified in ASHRAE 15 or Table 1106.4.2. Shutdown of the emergency ventilation system shall be by manual means.</p> <p>1106.4.2 Refrigerant Detector. In addition to the requirements of Section 1105.3, refrigerant detectors shall signal an alarm and activate the ventilation system in accordance with the response time specified in Table 1106.4.2.</p> <p>Add new text as follows:</p> <p>TABLE 1106.4.2 GROUP A2L and B2L DETECTOR ACTIVATION</p> <p>Activation Level Maximum Response Time (seconds)</p> <table border="1"> <thead> <tr> <th>Activation Level</th> <th>Maximum Response Time (seconds)</th> <th>ASHRAE 15 Ventilation Level</th> <th>Alarm Reset</th> <th>Alarm Type</th> </tr> </thead> <tbody> <tr> <td>Less than or equal to the OEL in Table 1103.1</td> <td>300</td> <td>1</td> <td>Automatic</td> <td>Trouble</td> </tr> <tr> <td>Less than or equal to the refrigerant concentration level in Table 1103.1</td> <td>15</td> <td>2</td> <td>Manual</td> <td>Emergency</td> </tr> </tbody> </table> <p>Delete without substitution:</p> <p>TABLE 1106.4.2 MINIMUM EXHAUST RATES</p> <p>Delete and substitute as follows:</p> <p>1106.4.3 Emergency ventilation system discharge. The emergency ventilation system point of discharge to the atmosphere shall be located outside of the structure at not less than 15 feet (4572 mm) above the adjoining grade level and not</p>	Activation Level	Maximum Response Time (seconds)	ASHRAE 15 Ventilation Level	Alarm Reset	Alarm Type	Less than or equal to the OEL in Table 1103.1	300	1	Automatic	Trouble	Less than or equal to the refrigerant concentration level in Table 1103.1	15	2	Manual	Emergency					
Activation Level	Maximum Response Time (seconds)	ASHRAE 15 Ventilation Level	Alarm Reset	Alarm Type																	
Less than or equal to the OEL in Table 1103.1	300	1	Automatic	Trouble																	
Less than or equal to the refrigerant concentration level in Table 1103.1	15	2	Manual	Emergency																	

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Sub Code:						
	less than 20 feet (6096 mm) from any window, ventilation opening or exit. 1106.4.3 Mechanical Ventilation. The machinery room shall have a mechanical ventilation system complying with ASHRAE 15.					
M78-21 Part II	[F] 1106.4.1 Ventilation system activation. Ventilation shall be activated by the refrigerant detection system in the machinery room		X			Clarification
M79-21	Revise as follows: 1102 REFRIGERATION SYSTEM REQUIREMENTS 1102.1 General. The system <u>refrigeration system</u> classification, allowable refrigerants, maximum quantity, enclosure requirements, location limitations, and field pressure test requirements shall be determined as follows: 1. Determine the refrigeration system’s classification, in accordance with Section 1103.3. 2. Determine the refrigerant classification in accordance with Section 1103.1. 3. Determine the maximum allowable quantity of refrigerant in accordance with Section 1104, based on type of refrigerant, <u>refrigeration system</u> classification and occupancy. 4. Determine the <u>refrigeration system</u> enclosure requirements in accordance with Section 1104. 5. Refrigeration equipment and appliance location and installation shall be subject to the limitations of Chapter 3. 6. Non-factory tested, field-erected equipment and appliances shall be pressure tested in accordance with Section 1108. 1102.2.1 Mixing. Refrigerants, including refrigerant blends, with different designations in ASHRAE 34 shall not be mixed in a <u>refrigeration</u> system. Exception: Addition of a second refrigerant is allowed where permitted by the equipment or appliance manufacturer to improve oil return at low temperatures. The refrigerant and amount added shall be in accordance with the manufacturer’s instructions. SECTION 1104 — REFRIGERATION SYSTEM APPLICATION REQUIREMENTS 1104.2 Machinery room. Except as provided in Sections 1104.2.1 and 1104.2.2, all components containing the refrigerant shall be located either outdoors or in a machinery		X			Clarification

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>room where the quantity of refrigerant in an independent circuit of a system <u>refrigeration system</u> exceeds the amounts shown in Table 1103.1. For refrigerant blends not listed in Table 1103.1, the same requirement shall apply where the amount for any blend component exceeds that indicated in Table 1103.1 for that component. This requirement shall also apply where the combined amount of the blend components exceeds a limit of 69,100 parts per million (ppm) by volume. Machinery rooms required by this section shall be constructed and maintained in accordance with Section 1105 for Group A1 and B1 refrigerants and in accordance with Sections 1105 and 1106 for Group A2, B2, A3 and B3 refrigerants.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Machinery rooms are not required for listed equipment and appliances containing not more than 6.6 pounds (3 kg) of refrigerant, regardless of the refrigerant’s safety classification, where installed in accordance with the equipment’s or appliance’s listing and the equipment or appliance manufacturer’s installation instructions. 2. Piping in compliance with Section 1107 is allowed in other locations to connect components installed in a machinery room with those installed outdoors. <p>1104.2.2 Industrial occupancies and refrigerated rooms. This section applies only to rooms and spaces that: are within industrial occupancies; contain a refrigerant evaporator; are maintained at temperatures below 68°F (20°C); and are used for manufacturing, food and beverage preparation, meat cutting, other processes and storage. Where a machinery room would otherwise be required by Section 1104.2, a machinery room shall not be required where all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The space containing the machinery is separated from other occupancies by tight construction with tight-fitting doors. 2. Access is restricted to authorized personnel. 3. Refrigerant detectors are installed as required for machinery rooms in accordance with Section 1105.3. <p>Exception: Refrigerant detectors are not required in unoccupied areas that contain only continuous piping that does not include valves, valve assemblies, equipment or equipment connections.</p>					

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Sub Code:						
	<p>4. Surfaces having temperatures exceeding 800°F (427°C) and open flames are not present where any Group A2, B2, A3 or B3 refrigerant is used (see Section 1104.3.4).</p> <p>5. All electrical equipment and appliances conform to Class I, Division 2, hazardous location classification requirements of NFPA 70 where the quantity of any Group A2, B2, A3 or B3 refrigerant in a single independent circuit would exceed 25 percent of the lower flammability limit (LFL) upon release to the space.</p> <p>6. All refrigerant-containing parts <u>in refrigeration</u> systems with a total connected compressor power exceeding 100 horsepower (hp) (74.6 kW) —except evaporators used for refrigeration or dehumidification, condensers used for heating, control and pressure relief valves for either, low probability pumps and connecting piping—are located either outdoors or in a machinery room.</p> <p>1106.3 Flammable refrigerants. Where refrigerants of Groups A2, A3, B2 and B3 are used, the machinery room shall conform to the Class I, Division 2, hazardous location classification requirements of NFPA 70.</p> <p>Exception: Machinery rooms for <u>refrigeration</u> systems containing Group A2L refrigerants that are provided with ventilation in accordance with Section 1106.4.</p> <p>1106.4 Special requirements for Group A2L refrigerant machinery rooms. Machinery rooms with <u>systems refrigeration systems</u> containing Group A2L refrigerants that do not conform to the Class I, Division 2, hazardous location electrical requirements of NFPA 70, as permitted by the exception to Section 1106.3, shall comply with Sections 1106.4.1 through 1106.4.3.</p> <p>Exception: Machinery rooms conforming to the Class I, Division 2, hazardous location classification requirements of NFPA 70 are not required to comply with Sections 1106.4.1 and 1106.4.2.</p> <p>1107.1 Piping. Refrigerant piping material for other than R-717 (ammonia) <u>refrigeration</u> systems shall conform to the requirements in this section. Piping material and installations for R-717 (ammonia) refrigeration systems shall comply with IIAR 2.</p>					

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Sub Code:						
	<p>1107.3 Materials rating. Materials, joints and connections shall be rated for the operating temperature and pressure of the refrigerant system. Materials shall be suitable for the type of refrigerant and type of lubricant in the refrigerant <u>refrigeration system</u>. Magnesium alloys shall not be used in contact with any halogenated refrigerants. Aluminum, zinc, magnesium and their alloys shall not be used in contact with R-40 (methyl chloride).</p> <p>1107.6 Valves. Valves shall be of materials that are compatible with the type of piping material, refrigerants and oils in the refrigeration system. Valves shall be listed and labeled and rated for the temperatures and pressures of the refrigeration systems in which the valves are installed.</p> <p>1107.7 Flexible connectors, expansion and vibration compensators. Flexible connectors and expansion and vibration control devices shall be listed and labeled for use in refrigerant refrigeration systems.</p> <p>1108.1 Approval. Joints and connections shall be of an approved type. Joints and connections shall be tight for the pressure of the Refrigerant <u>refrigeration system</u> when tested in accordance with Section 1110.</p> <p>1108.3.3 Soldered joints. Joint surfaces to be soldered shall be cleaned and a flux conforming to ASTM B813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B32. Solder joints shall be limited to refrigerant <u>refrigeration systems</u> using Group A1 refrigerant and having a pressure of less than or equal to 200 psi (1378 kPa).</p> <p>1109.2.5 Refrigerant pipe shafts. Refrigerant piping that penetrates two or more floor/ceiling assemblies shall be enclosed in a fire resistance-rated shaft enclosure. The fire-resistance-rated shaft enclosure shall comply with Section 713 of the International Building Code.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Refrigeration systems</u> Systems using R-718 refrigerant (water). Piping in a direct refrigeration system using Group A1 refrigerant where the refrigerant quantity does not exceed the limits of Table 1103.1 for the smallest occupied space through which the piping passes. Piping located on the exterior of the building where vented to the outdoors. 					

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	<p>1109.8.1 Refrigerating Refrigeration systems containing more than 6.6 pounds (3.0 kg) of refrigerant. Stop valves shall be installed in the following locations on refrigerating-refrigeration <u>refrigeration</u> systems containing more than 6.6 pounds (3.0 kg) of refrigerant:</p> <ol style="list-style-type: none"> 1. The suction inlet of each compressor, compressor unit or condensing unit. 2. The discharge outlet of each compressor, compressor unit or condensing unit. 3. The outlet of each liquid receiver. <p>1109.8.2 Refrigeration systems containing more than 100 pounds (45 kg) of refrigerant. In addition to stop valves required by Section 1109.8.1, <u>refrigeration</u> systems containing more than 100 pounds (45 kg) of refrigerant shall have stop valves installed in the following locations:</p> <ol style="list-style-type: none"> 1. Each inlet of each liquid receiver. 2. Each inlet and each outlet of each condenser where more than one condenser is used in parallel. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Stop valves shall not be required at the inlet of a receiver in a condensing unit nor at the inlet of a receiver that is an integral part of the condenser. 2. <u>Refrigeration systems</u> Systems utilizing nonpositive displacement compressors. <p>1110.3 Test gases. The medium used for pressure testing the refrigerant <u>refrigeration</u> system shall be one of the following inert gases: oxygen-free nitrogen, helium or argon. For R-744 refrigerant <u>refrigeration</u> systems, carbon dioxide shall be allowed as the test medium. For R-718 refrigerant <u>refrigeration</u> systems, water shall be allowed as the test medium. Oxygen, air, combustible gases and mixtures containing such gases shall not be used as a test medium. Systems erected on the premises with tubing not exceeding 1/2 inch (12.7 mm) outside diameter shall be allowed to use the refrigerant identified on the nameplate label or marking as the test medium.</p> <p>1110.5.1 Joints and refrigerant-containing parts in air ducts. Joints and all refrigerant-containing parts of a refrigerating <u>refrigeration</u> system located in an air duct of an air-conditioning system that conveys conditioned air to and from human-occupied spaces shall be tested at a pressure of 150 percent of</p>					

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Sub Code:									
	<p>the higher of the design pressure or pressure relief device setting.</p> <p>1110.6 Booster compressor. Where a compressor protected by a pressure relief device is used as a booster to obtain an intermediate pressure, and such compressor discharges into the suction side of another compressor, the booster compressor shall be considered to be a part of the low-pressure side of <u>the refrigeration system.</u> the system.</p> <p>1110.7 Centrifugal/nonpositive displacement compressors. Where <u>testing refrigeration systems</u> using centrifugal or other nonpositive displacement compressors, the entire system shall be considered to be the low-pressure side for <u>test purposes.</u> testing systems</p> <p>1110.8 Contractor or engineer declaration. The installing contractor or registered design professional of record shall issue a certificate of test to the code official for all systems <u>refrigeration systems</u> containing 55 pounds (25 kg) or more of refrigerant. The certificate shall give the test date, name of the refrigerant, test medium and the field test pressure applied to the high-pressure side and the low-pressure side of the <u>refrigeration</u> system. The certification of test shall be signed by the installing contractor or registered design professional and shall be made part of the public record.</p>								
M80-21	<p>Revise as follows:</p> <p>PIPING. Where used in this code, “piping” refers to either pipe or tubing, or both.</p> <p>Pipe. A rigid conduit of iron, steel, copper, copper-alloy, <u>or plastic, or multilayer composite aluminum and plastic.</u></p> <p>Tubing. Semirigid conduit of copper, copper-alloy, aluminum, plastic, <u>or steel, or multilayer composite aluminum and plastic.</u></p> <p>TABLE 1107.4 REFRIGERANT PIPE Portions of Table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">PIPING MATERIAL</th> <th style="text-align: center;">STANDARD</th> </tr> </thead> <tbody> <tr> <td style="font-size: small;">Polyethylene of raised temperature / aluminum / polyethylene of raised temperature (PERT/AL/PERT) linesets</td> <td style="font-size: small;">ASTM FXXXX</td> </tr> </tbody> </table> <p>Add new text as follows:</p> <p><u>1108.10 PERT/AL/PERT pipe.</u> Joints between PERT/AL/PERT pipe or fittings shall be mechanical or press-connect joints conforming to Section <u>1108.3.</u></p>	PIPING MATERIAL	STANDARD	Polyethylene of raised temperature / aluminum / polyethylene of raised temperature (PERT/AL/PERT) linesets	ASTM FXXXX	X			Press-connect joints are typically lower in cost
PIPING MATERIAL	STANDARD								
Polyethylene of raised temperature / aluminum / polyethylene of raised temperature (PERT/AL/PERT) linesets	ASTM FXXXX								

Table 1. 2024 IMC Changes Cost Impact

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Sub Code:															
	Revise as follows: 1109.4.1 Piping material. Piping material for Group A2, A3, B2 or B3 refrigerant located inside the building, except for machinery rooms, shall be copper pipe, brass pipe or steel pipe. <u>Multilayer composite PERT/AL/PERT pipe may be used for Group A2 refrigerant.</u> Pipe joints located in areas other than the machinery room shall be welded. Self-contained listed and labeled equipment or appliances shall have piping material based on the listing requirements. <u>Exception: PERT/AL/PERT pipe joints located in areas other than the machinery room shall be mechanical or press-connect joints.</u>														
M81-21	Delete without substitution: 1108.5 Brass (copper alloy) pipe. Joints between brass pipe or fittings shall be brazed, mechanical, press-connect, threaded or welded joints conforming to Section 1108.3.		X			Clarification.									
M82-21	Revise as follows: 1109.4.1 Piping material. Piping material for Group A2, A3, B2 or B3 refrigerant located inside the building, except for machinery rooms, shall be copper pipe, brass <u>copper alloy</u> pipe or steel pipe. Pipe joints located in areas other than the machinery room shall be welded. Self-contained listed and labeled equipment or appliances shall have piping material based on the listing requirements.		X			Clarification.									
M83-21	Revise as follows: TABLE 1107.4 REFRIGERANT PIPE Portions of Table not shown remain unchanged. <table border="1" data-bbox="228 1493 976 1598"> <thead> <tr> <th>PIPING MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Steel pipe^b</td> <td>ASTM A53, ASTM A106, ASTM A333</td> </tr> </tbody> </table> b. ASTM A53, Type F steel pipe shall not be used for refrigerant lines having an operating temperature less than 20°F (- 29°C). <u>only be permitted for discharge lines in pressure relief systems.</u> TABLE 1107.5 REFRIGERANT PIPE FITTINGS Portions of Table not shown remain unchanged. <table border="1" data-bbox="228 1787 976 1883"> <thead> <tr> <th>FITTING MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Brass (copper alloy)</td> <td>ASME B16.15, ASME B16.24</td> </tr> <tr> <td>Copper and Copper Alloy (Brass)</td> <td>ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.24, ASME B16.26, ASME B16.50</td> </tr> </tbody> </table>	PIPING MATERIAL	STANDARD	Steel pipe ^b	ASTM A53, ASTM A106, ASTM A333	FITTING MATERIAL	STANDARD	Brass (copper alloy)	ASME B16.15, ASME B16.24	Copper and Copper Alloy (Brass)	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.24, ASME B16.26, ASME B16.50		X		New design options.
PIPING MATERIAL	STANDARD														
Steel pipe ^b	ASTM A53, ASTM A106, ASTM A333														
FITTING MATERIAL	STANDARD														
Brass (copper alloy)	ASME B16.15, ASME B16.24														
Copper and Copper Alloy (Brass)	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.24, ASME B16.26, ASME B16.50														

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>1107.7 Flexible connectors, expansion and vibration compensators. Flexible connectors and expansion and vibration control devices shall be listed and labeled for use in refrigerant systems, and pressures for which the components are installed.</p> <p>1109.2.2 Refrigerant pipe enclosure. Refrigerant piping shall be protected by locating it within the building elements or within protective enclosures.</p> <p>Exception: Piping protection within the building elements or protective enclosure shall not be required in any of the following locations:</p> <ol style="list-style-type: none"> Where installed without ready access or located more than 7 feet 3 inches (2210 mm) above the finished floor. Where located within 6 feet (1829 mm) of the refrigerant unit or appliance. Where located in a machinery room complying with Section 1105. Outside the building: <ol style="list-style-type: none"> Protected from damage from the weather, including, but not limited to, hail, ice, and snow loads, and Protected from damage within the expected foot or traffic path Outside underground installed not less than 8 inches (200 mm) below finished grade and protected against corrosion. <p>1109.2.3 Prohibited locations. Refrigerant piping shall not be installed in any of the following locations:</p> <ol style="list-style-type: none"> Exposed within a fire-resistance-rated exit access corridor. Exposed within an interior exit stairway. Within an interior exit ramp. Within an exit passageway. Within an elevator, dumbwaiter or other shaft containing a moving object. <p>1109.2.6 Exposed piping surface temperature. Exposed piping with ready access to <u>nonauthorized personnel</u> having surface temperatures greater than 120°F (49°C) or less than 5°F (-15°C) shall be protected from contact or shall have thermal insulation that limits the exposed insulation surface temperature to a range of 5°F (-15°C) to 120°F (49°C).</p>					

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>1109.2.7 Pipe identification. Refrigerant pipe located in areas other than the room or space where the refrigerating equipment is located shall be identified. The pipe identification shall be located at intervals not exceeding 20 feet (6096 mm) on the refrigerant piping or pipe insulation. The minimum height of lettering of the identification label shall be 1/8 inch (12.7 mm). The identification shall indicate the refrigerant designation and safety group classification of refrigerant used in the piping system. <u>For Group A2L and B2L refrigerants the identification shall also include the following statement: "WARNING – Risk of Fire. Flammable Refrigerant."</u> For Group A2, A3, B2 and B3 refrigerants, the identification shall also include the following statement: "DANGER—Risk of Fire or Explosion. Flammable Refrigerant."</p> <p>For any Group B refrigerant, the identification shall also include the following statement: "DANGER—Toxic Refrigerant."</p> <p>1109.3 Installation requirements for Group A2L, A2, A3, or B2L, B2, or B3 refrigerant. Piping systems using Group A2L, A2, A3, or B2L, B2, or B3 refrigerant shall comply with the requirements of Sections 1109.3.1 and 1109.3.2.</p> <p>1109.3.1 Pipe protection. In addition to the requirements of Section 305.5, aluminum, copper and steel tube used for Group A2L, A2, A3, and B2L, B2, and B3 refrigerants and located in concealed locations where tubing is installed in studs, joists, rafters or similar member spaces, and located less than 1 1/2 inches (38 mm) from the nearest edge of the member, shall be continuously protected by shield plates. Protective steel shield plates having a minimum thickness of 0.0575 inch (1.46 mm) (No. 16 gage) shall cover the area of the tube plus the area extending not less than 2 inches (51 mm) beyond both sides of the tube.</p> <p>1109.3.2 Shaft ventilation. Refrigerant pipe shafts with systems using Group A2L or B2L refrigerant shall be naturally or mechanically ventilated. <u>Refrigerant pipe shafts with one or more systems using any Group A2, A3, B2, or B3 refrigerant shall be continuously mechanically ventilated and shall include a refrigerant detector.</u> The shaft ventilation exhaust outlet shall comply with Section 501.3.1.</p>					

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>Naturally ventilated shafts shall have a pipe, duct or conduit not less than 4 inches (102 mm) in diameter that connects to the lowest point of the shaft and extends to the outdoors. The pipe, duct or conduit shall be level or pitched downward to the outdoors. Mechanically ventilated shafts shall have a minimum airflow velocity in accordance with Table 1109.3.2. The mechanical ventilation shall be continuously operated or activated by a refrigerant detector. Systems utilizing a refrigerant detector shall activate the mechanical ventilation at a maximum refrigerant concentration of 25 percent of the lower flammable limit of the refrigerant. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The shaft shall not be required to be ventilated for double-wall refrigerant pipe where the interstitial space of the double-wall pipe is vented to the outdoors.</p> <p>Delete without substitution:</p> <p>1109.4 Installation requirements for Group A2, A3, B2 or B3 refrigerant. Piping systems using Group A2, A3, B2 or B3 refrigerant shall comply with the requirements of Sections 1109.4.1 and 1109.4.2.</p> <p>1109.4.1 Piping material. Piping material for Group A2, A3, B2 or B3 refrigerant located inside the building, except for machinery rooms, shall be copper pipe, brass pipe or steel pipe. Pipe joints located in areas other than the machinery room shall be welded. Self-contained listed and labeled equipment or appliances shall have piping material based on the listing requirements.</p> <p>1109.4.2 Shaft ventilation. Refrigerant pipe shafts with systems using Group A2, A3, B2 or B3 refrigerant shall be continuously mechanically ventilated. The shaft ventilation exhaust outlet shall comply with Section 501.3.1. Mechanically ventilated shafts shall have a minimum airflow velocity as specified in Table 1109.3.2. The shaft shall not be required to be ventilated for double-wall refrigerant pipe where the interstitial space of the double wall pipe is vented to the outdoors.</p> <p>1109.7 Condensate control. Refrigerating piping and fittings that, during normal operation, will reach a surface temperature below the dew point of the surrounding air, and are located in spaces or areas where condensation has the potential to cause</p>					

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>a safety hazard to the building occupants, structure, electrical equipment or any other equipment or appliances, shall be insulated or protected in an approved manner to prevent damage from condensation.</p> <p>Revise as follows:</p> <p>1110.3 Test gases. The medium used for pressure testing the refrigerant system shall be one of the following inert gases: oxygen-free nitrogen, helium, or argon, <u>or premixed nonflammable oxygen-free nitrogen with a tracer gas of hydrogen or helium.</u> For R-744 refrigerant systems, carbon dioxide shall be allowed as the test medium. For R-718 refrigerant systems, water shall be allowed as the test medium. Oxygen, air, combustible gases and mixtures containing such gases shall not be used as a test medium. Systems erected on the premises with tubing not exceeding 1/2 inch (15.9 mm) outside diameter shall be allowed to use the refrigerant identified on the nameplate label or marking as the test medium.</p> <p>Add new text as follows:</p> <p>1110.3.1 Test Gases Not Permitted. <u>Oxygen, air, refrigerants other than those identified in Section 1110.3, combustible gases and mixtures containing such gases shall not be used as the pressure test medium.</u></p> <p>Revise as follows:</p> <p>1110.5 Piping system strength test pressure test and leak test. <u>Refrigerating system components and refrigerant piping shall be tested in accordance with ASME B31.5 or this section. Separate tests for isolated portions of the system are permitted provided that all required portions are tested at least once. Pressurize with test gas for a minimum of 10 minutes to not less than the lower of (a) the lowest design pressure for any system component, or (b) the lowest value of set pressure for any pressure relief devices in the system. The design pressures for determination of test pressure shall be the pressure identified on the label nameplate of the condensing unit, compressor, compressor unit, pressure vessel, or other system component with a nameplate. A passing test result shall have no rupture or structural failure of any system component or refrigerant piping.</u></p>					

Table 1. 2024 IMC Changes Cost Impact

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>Refrigerant piping and tubing greater than 3/4 inches in diameter shall be tested in accordance with ASHRAE 15. The refrigerant piping system shall be tested as a whole or separate tests shall be conducted for the low-pressure side and high-pressure side of the piping system. The refrigerant piping system shall be tested in accordance with both of the following methods:</p> <p>1. The system shall be pressurized for a period of not less than 60 minutes to not less than the lower of the design pressures or the setting of the pressure relief device(s). The design pressures for testing shall be the pressure listed on the label nameplate of the condensing unit, compressor, compressor unit, pressure vessel or other system component with a nameplate. Additional test gas shall not be added to the system after the start of the pressure test. The system shall not show loss of pressure on the test pressure measuring device during the pressure test. Where using refrigerant as a test medium in accordance with Section 1110.3, the test pressure shall be not less than the saturation dew point pressure at 77°F (25°C).</p> <p>2. A vacuum of 500 microns shall be achieved. After achieving a vacuum, the system shall be isolated from the vacuum pump. The system pressure shall not rise above 1,500 microns for a period of not less than 10 minutes.</p> <p>Delete without substitution:</p> <p>1110.5.2 Limited charge systems. Limited charge systems with a pressure relief device, erected on the premises, shall be tested at a pressure not less than one and one-half times the pressure setting of the relief device. Listed and labeled limited charge systems shall be tested at the equipment or appliance design pressure.</p> <p>1110.5.1 Joints and refrigerant containing parts in air ducts. Joints and all refrigerant containing parts of a refrigerating system located in an air duct of an air-conditioning system that conveys conditioned air to and from human-occupied spaces shall be tested at a pressure of 150 percent of the higher of the design pressure or pressure relief device setting.</p> <p>1110.6 Booster compressor. Where a compressor protected by a pressure relief device is used as a booster to obtain an intermediate pressure, and such compressor discharges into the suction side of another compressor, the booster</p>					

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>compressor shall be considered to be a part of the low pressure side of the system.</p> <p>1110.7 Centrifugal/nonpositive displacement compressors. Where testing systems using centrifugal or other nonpositive displacement compressors, the entire system shall be considered to be the low pressure side for test purposes.</p>					
M84-21	<p>Delete and substitute as follows:</p> <p>1110.3 Test gases. The medium used for pressure testing the refrigerant system shall be one of the following inert gases: oxygen-free nitrogen, helium or argon. For R-744 refrigerant systems, carbon dioxide shall be allowed as the test medium. For R-718 refrigerant systems, water shall be allowed as the test medium. Oxygen, air, combustible gases and mixtures containing such gases shall not be used as a test medium. Systems erected on the premises with tubing not exceeding 1/2 inch (15.9 mm) outside diameter shall be allowed to use the refrigerant identified on the nameplate label or marking as the test medium.</p> <p>1110.3 Test gases.</p> <p><u>Tests shall be performed with dry nitrogen or other nonflammable, nonreactive, dried gas. Oxygen, air, or mixtures containing them shall not be used. The means used to build up the test pressure shall have either a pressure limiting device or a pressure-reducing device and a gauge on the outlet side. The pressure-relief device shall be set above the test pressure but low enough to prevent permanent deformation of the system's components.</u></p> <p>Exceptions:</p> <p><u>1. Mixtures of dry nitrogen, inert gases, or a combination of them with Class 1 refrigerant in concentrations of a refrigerant weight fraction (mass fraction) not exceeding 5 percent shall be permitted for tests.</u></p> <p><u>2. Mixtures of dry nitrogen, inert gases, or a combination of them with Class 2L, Class 2 and Class 3 refrigerants in concentrations not exceeding the lower of a refrigerant weight fraction (mass fraction) of 5 percent or 25 percent of the LFL shall be permitted for tests.</u></p> <p><u>3. Compressed air without added refrigerants shall be permitted for tests, provided the system is subsequently evacuated to less than 1000 microns (0.1333 kPa) before</u></p>		X		Clarification.	

Table 1. 2024 IMC Changes Cost Impact

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	<p><u>charging with refrigerant. The required evacuation level is atmospheric pressure for systems using R-718 (water) or R-744 (carbon dioxide) as the refrigerant.</u></p> <p><u>4. Systems erected on the premises using Group A1 refrigerant and with copper tubing not exceeding 0.62 of an inch (15.7 mm) outside diameter shall be tested by means of the refrigerant charged into the system at the saturated vapor pressure of the refrigerant at not less than 68°F (20°C).</u></p>					
M85-21	<p>Revise as follows: 1201.1 Scope. The provisions of this chapter shall govern the construction, installation, alteration and repair of hydronic piping systems. This chapter shall apply to hydronic piping systems that are part of heating, ventilation and air-conditioning systems. Such piping systems shall include steam, hot water, <u>radiant heating, radiant cooling</u>, chilled water, steam condensate, and ground source heat pump loop systems and <u>snow- and ice-melting</u>. Potable cold and hot water distribution systems shall be installed in accordance with the International Plumbing Code .</p>		X			Editorial.
M86-21	<p>Revised as follows: Removed lead pipe from TABLE 1202.4 HYDRONIC PIPE.</p>		X			Editorial clarification.
M87-21	<p>Revised as follows: Added stainless steel pipe and tubing to TABLE 1202.4 HYDRONIC PIPE and removed ASTM A554 from Stainless steel pipe standards.</p>		X			Editorial clarification and update.
M88-21	<p>Revised as follows: Added ASTM F3226 to copper and copper alloys and removed ASTM A554 from Stainless steel pipe in TABLE 1202.5 HYDRONIC PIPE FITTINGS.</p>		X			Editorial clarification.
M89-21	<p>Revise as follows: 1203.3.4 Solvent-cemented joints. Joint surfaces shall be clean and free from moisture. An approved primer shall be applied to CPVC and PVC pipe-joint surfaces. Joints shall be made while the cement is wet. Solvent cement conforming to the following standards shall be applied to all joint surfaces: 1. ASTM D2235 for ABS joints. 2. ASTM F493 for CPVC joints. 3. ASTM D2564 for PVC joints. CPVC joints shall be made in accordance with ASTM D2846.</p>		X			Allows for better inspection of joints.

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CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	Exception: For CPVC pipe joint connections, a primer is not required where all of the following conditions apply: 1. The solvent cement used is third-party certified as conforming to ASTM F493. 2. The solvent cement is yellow or green in color. 3. The solvent cement is used only for joining / -inch (12.7 mm) through 2-inch (51 mm) diameter CPVC pipe and fittings. 4. The CPVC pipe or fittings are manufactured in accordance with ASTM D2846.					
M90-21	Delete without substitution: 1203.9 Polybutylene plastic pipe and tubing. Joints between polybutylene plastic pipe and tubing or fittings shall be mechanical joints conforming to Section 1203.3 or heat-fusion joints conforming to Section 1203.9.1. 1203.9.1 Heat-fusion joints. Joints shall be of the socket-fusion or butt-fusion type. Joint surfaces shall be clean and free from moisture. Joint surfaces shall be heated to melt temperatures and joined. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM D3309.		X			Editorial Clarification.
M91-21	Add new text as follows: 1203.14 Stainless Steel Pipe. Joints between stainless steel pipe or fittings shall be mechanical joints that are made with an approved elastomeric seal, or shall be threaded or welded joints conforming to Section 1203.3. 1203.15 Stainless Steel Tubing. Joints between stainless steel tubing or fittings shall be mechanical or welded joints conforming to Section 1203.3.		X			New design options
M92-21	Revised as follows: 1205.1 Where required. Shutoff valves shall be installed in hydronic piping systems in the locations indicated in Sections 1205.1.1 through 1205.1.6. <u>Access shall be provided to all full open valves and shutoff valves.</u>		X			Editorial clarification.
M93-21	Revised as follows: Added ASTM F3253 to cross-linked polyethylene (PEX) standard.		X			Clarification.
M95-21	Revise as follows: 1209.1 Materials. Piping for heating panels shall be standard-weight steel pipe, Type L copper tubing, polybutylene or other		X			Editorial.

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Sub Code:																						
	approved plastic pipe or tubing rated at 100 psi (689 kPa) at 180°F (82°C).																					
M96-21	Delete without substitution: 1209.3.3 Polybutylene joints. Polybutylene pipe and tubing shall be installed in continuous lengths or shall be joined by heat fusion in accordance with Section 1203.9.1.		X			Editorial.																
M97-21	Add new text as follows: 1209.6 Radiant tubing placement. Hydronic tubing to be embedded for the purpose of radiant heating or cooling shall be installed in accordance with the manufacturer’s instructions and with the tube layout and spacing in accordance with the system design. Individual tubing circuit lengths shall be installed with a variance of not more than ±10 percent from the design. 1209.6.1 Radiant tubing circuit length. The maximum circuit length of radiant tubing from a supply-and-return manifold shall not exceed the lengths specified by the system design or, in the absence of manufacturer’s specifications, the lengths specified in Table 1209.6.1. TABLE 1209.6.1 MAXIMUM CIRCUIT LENGTH OF RADIANT TUBING FROM A SUPPLY-AND-RETURN MANIFOLD ARRANGEMENT <table border="1" data-bbox="228 1209 959 1740"> <thead> <tr> <th><u>NOMINAL TUBE SIZE</u></th> <th><u>MAXIMUM CIRCUIT LENGTH (FEET)</u></th> </tr> </thead> <tbody> <tr> <td align="center"><u>1/4</u></td> <td align="center"><u>125</u></td> </tr> <tr> <td align="center"><u>5/16</u></td> <td align="center"><u>200</u></td> </tr> <tr> <td align="center"><u>3/8</u></td> <td align="center"><u>250</u></td> </tr> <tr> <td align="center"><u>1/2</u></td> <td align="center"><u>300</u></td> </tr> <tr> <td align="center"><u>5/8</u></td> <td align="center"><u>400</u></td> </tr> <tr> <td align="center"><u>3/4</u></td> <td align="center"><u>500</u></td> </tr> <tr> <td align="center"><u>1</u></td> <td align="center"><u>750</u></td> </tr> </tbody> </table> For SI units: 1 foot = 304.8 mm 1209.6.2 Radiant tubing circuit tags. Each individual radiant tubing circuit shall have a tag or label securely affixed to each	<u>NOMINAL TUBE SIZE</u>	<u>MAXIMUM CIRCUIT LENGTH (FEET)</u>	<u>1/4</u>	<u>125</u>	<u>5/16</u>	<u>200</u>	<u>3/8</u>	<u>250</u>	<u>1/2</u>	<u>300</u>	<u>5/8</u>	<u>400</u>	<u>3/4</u>	<u>500</u>	<u>1</u>	<u>750</u>		X			Clarification.
<u>NOMINAL TUBE SIZE</u>	<u>MAXIMUM CIRCUIT LENGTH (FEET)</u>																					
<u>1/4</u>	<u>125</u>																					
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	<p><u>manifold outlet to indicate the length of each circuit and the areas served.</u></p> <p>1209.6.3 Radiant tubing drawings. The radiant tubing drawings and design report shall be provided to the building owner or the designated representative of the building owner.</p>														
M98-21	<p>Add new text as follows:</p> <p>1209.7 Snow & ice melt tubing placement. Hydronic tubing to be embedded for the purpose of snow & ice melt systems shall be installed in accordance with the manufacturer’s installation instructions and with the tube layout and spacing in accordance with the system design.</p> <p>1209.7.1 Snow-and ice-melt tubing circuit length. The maximum circuit length of snow- and ice- melt tubing from a supply-and-return manifold shall not exceed the lengths specified by the system design or, in the absence of manufacturer’s specifications, the lengths specified in Table 1209.7.1. Individual tubing circuit lengths shall be installed with a variance of not more than ±10 percent from the design.</p> <p>TABLE 1209.7.1 MAXIMUM CIRCUIT LENGTH OF SNOW- AND ICE-MELT TUBING FROM A SUPPLY-AND-RETURN MANIFOLD ARRANGEMENT</p> <table border="1"> <thead> <tr> <th>NOMINAL TUBE SIZE</th> <th>MAXIMUM CIRCUIT LENGTH (FEET)</th> </tr> </thead> <tbody> <tr> <td align="center">1/2</td> <td align="center">140</td> </tr> <tr> <td align="center">5/8</td> <td align="center">250</td> </tr> <tr> <td align="center">3/4</td> <td align="center">325</td> </tr> <tr> <td align="center">1</td> <td align="center">475</td> </tr> </tbody> </table> <p>For SI units: 1 foot = 304.8 mm</p> <p>1209.7.2 Snow- and ice-melt tubing drawings. The snow- and ice-melt tubing drawings and design report shall be provided to the building owner or the designated representative of the building owner.</p>	NOMINAL TUBE SIZE	MAXIMUM CIRCUIT LENGTH (FEET)	1/2	140	5/8	250	3/4	325	1	475		X		Clarification.
NOMINAL TUBE SIZE	MAXIMUM CIRCUIT LENGTH (FEET)														
1/2	140														
5/8	250														
3/4	325														
1	475														
M99-21 Part I & M100-21 Part I	<p>Revise as follows:</p> <p>TABLE 1210.5 GROUND-SOURCE LOOP PIPE FITTINGS Portions of Table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>PIPE MATERIAL</th> <th>STANDARD (see Chapter 15)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	PIPE MATERIAL	STANDARD (see Chapter 15)				X		Adds ASTM F3347 standard for PEX and PERT fitting products.						
PIPE MATERIAL	STANDARD (see Chapter 15)														

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		Decrease	Neutral	Increase								
Sub Code:												
	<p>Raised temperature polyethylene (PE-RT) ASTM D3281; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.1; CSA B137.18; CSA C448; NSF 358-4</p> <p>TABLE 1202.5 HYDRONIC PIPE FITTINGS Portions of Table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD (see Chapter 15)</th> </tr> </thead> <tbody> <tr> <td>PE-RT fittings</td> <td>ASSE 1061; ASTM D3281; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.1; CSA B137.18</td> </tr> <tr> <td>PEX fittings</td> <td>ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2159; ASTM F3253; ASTM F3347</td> </tr> </tbody> </table>	MATERIAL	STANDARD (see Chapter 15)	PE-RT fittings	ASSE 1061; ASTM D3281; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.1; CSA B137.18	PEX fittings	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2159; ASTM F3253; ASTM F3347					
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PE-RT fittings	ASSE 1061; ASTM D3281; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.1; CSA B137.18											
PEX fittings	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2159; ASTM F3253; ASTM F3347											
M101-21	<p>Revise as follows: 1210.6 Joints. Joints and connections shall be of an approved type. Joints and connections shall be tight for the pressure of the ground source loop system. Joints used underground shall be of an approved <u>type</u> for buried applications.</p>		X			Clarification						
FS47-21 Part III	<p>Add new definition as follows: 202 DRAFTSTOP. <u>A material, device or construction installed to restrict the movement of air within open spaces of concealed areas of building components such as crawl spaces, floor/ceiling assemblies, roof/ceiling assemblies and attics.</u> Revise as follows: 504.2 Exhaust penetrations. Where a clothes dryer exhaust duct penetrates a wall or ceiling membrane, the annular space shall be sealed with noncombustible material, approved fire caulking or a noncombustible dryer exhaust duct wall receptacle. Ducts that exhaust clothes dryers shall not penetrate or be located within any fireblocking, draftstopping <u>draftstops</u> or any wall, floor/ceiling or other assembly required by the International Building Code to be fire-resistance rated, unless such duct is constructed of galvanized steel or aluminum of the thickness specified in Section 603.4 and the fire-resistance rating is maintained in accordance with the International Building Code. Fire dampers, combination fire/smoke dampers and any similar devices that will obstruct the exhaust flow shall be prohibited in clothes dryer exhaust ducts.</p>		X			Editorial Clarification.						
G1-21 Part V	<p>Revised as follows: 306.1 Access. Appliances, controls devices, heat exchangers and HVAC system components that utilize energy shall be accessible <u>provide access</u> for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, venting systems or any other piping or ducts not</p>		X			Clarification & consistency.						

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>connected to the appliance being inspected, serviced, repaired or replaced. A level working space not less than 30 inches deep and 30 inches wide (762 mm by 762 mm) shall be provided in front of the control side to service an appliance.</p> <p>506.3.2.2 Duct-to-hood joints. Duct-to-hood joints shall be made with continuous internal or external liquid-tight welded or brazed joints. Such joints shall be smooth, accessible <u>available</u> for inspection, and without grease traps.</p> <p>Exceptions: This section shall not apply to:</p>					
G3-21 Part IV	<p>Add new definition as follows: <u>[BG] AMBULATORY CARE FACILITY.</u> <u>Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable.</u></p>		X			Clarification.
S196-22	<p>Revise as follows: [BS] 302.5 Cutting, and notching and boring in <u>cold-formed</u> steel framing. The cutting, <u>and</u> notching and boring of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. The cutting, notching and boring of steel framing members shall comply with Sections 302.5.1 through 302.5.3. Delete without substitution: [BS] 302.5.2 Cutting, notching and boring holes in cold formed steel framing. Flanges and lips of load-bearing cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations, penetration spacing or minimum hole edge distance as prescribed by the registered design professional. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the registered design professional. [BS] 302.5.3 Cutting, notching and boring holes in non-structural cold-formed steel wall framing. Flanges and lips of nonstructural cold-formed steel wall studs shall not be cut or notched. Holes in webs of nonstructural cold-formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed 1/ inches (38 mm) in width or 4 inches</p>		X			Provides clear and consistent criteria across all trades.

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	(102 mm) in length, and shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.					
S224-22	Modify as follows: [BS] 302.3 Cutting, notching and boring in wood framing. The cutting, notching and boring of wood framing members shall comply with Section <u>2304.14</u> 2308.3 of the International Building Code.		X			Editorial.
F54-21 Part II	Revised as follows: 1101.1 Scope. This chapter shall govern the design, installation, construction and repair of refrigeration systems that vaporize and liquefy a fluid during the refrigerating cycle. Permanently installed refrigerant storage systems and other components shall be considered as part of the refrigeration system to which they are attached. 1101.1.1 Refrigerants other than ammonia. Refrigeration systems using Refrigerant piping design and installation for systems containing a refrigerant other than ammonia, including pressure vessels and pressure relief devices, shall comply with this chapter, and ASHRAE 15, and the International Fire Code. 1101.1.2 Ammonia refrigerant. Refrigeration systems using ammonia as the refrigerant shall comply with IAR 2 for system design, IAR 3 for valves, IAR 4 for installation, and IAR 5 for start-up, and shall not be required to comply with this chapter.		X			Clarification.
7FG-21 Part II	Revised as follows: 907.1 General. <u>Factory built cremation furnaces and commercial direct-fed incinerators shall be listed and labeled in accordance with UL 2790. Factory-built incinerators for domestic applications shall be listed and labeled in accordance with UL 791.</u> Incinerators and crematories-cremation furnaces shall be listed and labeled in accordance with UL 791 and shall be installed in accordance with the manufacturer's instructions.		X			Clarification.
P6-21 Part III	Add new text as follows: 305.5.1 Shield plates. Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage). Revised as follows: 305.5 Protection against physical damage. In concealed locations where piping, other than cast-iron or steel, is installed through holes or notches in studs, joists, rafters or similar	X			Minimal	Adds consistency.

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>members less than 1-1/2 inches (38 mm) <u>1 1/4 inches (32 mm)</u> from the nearest edge of the member, the pipe shall be protected by shield plates. Protective steel shield plates having a minimum thickness of 0.0575 inch (1.463mm) (No. 16 gage) shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 2 inches (51 mm) above sole plates and below top plates.</p> <p>Add new text as follows: <u>305.5.1 Shield plates.</u> Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).</p> <p>Revised as follows: <u>504.8 Protection required against physical damage.</u> Protective shield plates shall be placed where nails or screws from finish or other work are likely to penetrate the clothes dryer exhaust duct. Shield plates shall be placed on the finished face of all framing members where there is less than 1 / inches (32 mm) between the duct and the finished face of the framing member. Protective shield plates shall be constructed of steel, have a thickness of 0.062 inch (1.6 mm) and extend not less than 2 inches (51 mm) above sole plates and below top plates.</p> <p>Added new text as follows: <u>504.8.1 Shield plates.</u> Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).</p> <p>Revise as follows: <u>1109.3.1 Protection against physical damage.</u> In addition to the requirements of Section 305.5, aluminum, copper and steel tube used for Group A2L A2, A3, B2 and B2L B3 refrigerants and located in concealed locations where tubing is installed in studs, joists, rafters or similar member spaces, and located less than 1 1/4 inches (32 mm) from the nearest edge of the member, shall be continuously protected by shield plates. Protective steel shield plates shall cover the area of the tube plus the area extending not less than 2 inches (51 mm) beyond both sides of the tube.</p>					
S196-22	<p>Revise as follows: <u>[BS] 302.5 Cutting, notching and boring in cold-formed steel framing.</u> The cutting, notching and boring of holes in cold-</p>		X			Consistency.

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. The cutting, notching and boring of steel framing members shall comply with Sections 302.5.1 through 302.5.3.</p> <p>Delete without substitution:</p> <p>[BS] 302.5.2 Cutting, notching and boring holes in cold formed steel framing. Flanges and lips of load-bearing cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations, penetration spacing or minimum hole edge distance as prescribed by the <i>registered design professional</i>. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the <i>registered design professional</i>.</p> <p>[BS] 302.5.3 Cutting, notching and boring holes in non-structural cold-formed steel wall framing. Flanges and lips of nonstructural cold-formed steel wall studs shall not be cut or notched. Holes in webs of nonstructural cold-formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed 1³/₂ inches (38 mm) in width or 4 inches (102 mm) in length, and shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.</p> <p>Modify as follows:</p> <p>2211.3 Cutting, and notching, and boring. The cutting, and notching and boring of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. The cutting, notching and boring of steel framing members shall comply with Sections 302.5.1 through 302.5.3.</p>					
S224-22	<p>Revise as follows:</p> <p>[BS] 302.3 Cutting, notching and boring in wood framing. The cutting, notching and boring of wood framing members shall comply with Sections 2308.3 of the <i>International Building Code</i>. 302.3.1 through 302.3.4.</p> <p>Delete without substitution:</p> <p>[BS] 302.3.1 Joist notching. Notches on the ends of joists shall not exceed one fourth the joist depth. Holes bored in joists shall not be within 2 inches (51 mm) of the top or bottom of the joist,</p>		X			Editorial.

Table 1. 2024 IMC Changes Cost Impact

CODE CHANGE #	2024 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>and the diameter of any such hole shall not exceed one third the depth of the joist. Notches in the top or bottom of joists shall not exceed one-sixth the depth and shall not be located in the middle third of the span.</p> <p>[BS] 302.3.2 Stud cutting and notching. In exterior walls and bearing partitions, a wood stud shall not be cut or notched in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.</p> <p>[BS] 302.3.3 Bored holes. The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall be not closer than $\frac{5}{8}$ inch (15.9 mm) to the edge of the stud. Bored holes shall be not located at the same section of stud as a cut or notch.</p>					

APPENDIX B

Table 2. 2021 IPC Changes Cost Impact						
CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
P3-21	Revised as follows: COPPER ALLOY. A homogenous mixture of two or more metals alloy where the principle in which copper is the primary component is copper, such as brass and bronze.		X			Clarification.
P4-21	Add new definition as follows: 202 SERVICE SINK. A sink exclusively intended to be used for facilitating the cleaning of a building or tenant space.		X			Clarification.
P5-21 Part I & P6-21 Part I	Revised as follows: TOILET FACILITY. A room or space that contains not less than one water closet and one lavatory. Add new definition as follows: FAMILY OR ASSISTED-USE TOILET FACILITY. A room separate from other toilet facilities intended to be used by all persons regardless of sex, families and those needing assisted care having; an independent entrance, not more than one adult-height water closet, not more than one adult-height lavatory, and is permitted to have one urinal, one child height water closet and one child height lavatory. FAMILY OR ASSISTED-USE BATHING ROOM. A room separate from other bathing rooms intended to be used by all persons regardless of sex, families and those needing assisted care having; an independent entrance, not more than one shower or bathtub, not more than one adult-height water closet and one adult-height lavatory, and is permitted to have one urinal, one child height water closet and one child height lavatory.		X			Clarification.
P8-21	Added new text as follows: 305.8 Expansive Soil. Where expansive soil is identified <u>under buildings in accordance with Section 1803.5.3 of the International Building Code, but not removed in accordance with Section 1808.6.3 of the International Building Code,</u> plumbing shall be protected in accordance with Section 305.8.1 or 305.8.2. 305.8.1 Non-Isolated Foundations. <u>Under foundations with slabs that are structurally supported by a subgrade, it shall be permitted for plumbing to be buried.</u>			X	Adds \$5.00/SF for protection	Change adds requirement and provides methods to protect plumbing in expansive soil under buildings.

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>305.8.2 Isolated Foundations. Under foundations with a slab or framing that structurally spans over an under-floor space which isolates the slab or framing from the effects of expansive soil swelling and shrinking <u>in accordance with Section 1808.6.1 of the International Building Code</u>, the plumbing shall be suspended so that plumbing, hangers and supports are isolated, by a void-space, from the effects of expansive soil swelling and shrinking.</p> <p>Exception: It shall be permitted for plumbing to be buried if the plumbing provides drainage of an under-floor space. To protect the void-space, soil shall be sloped, benched or retained in accordance with an approved design methodology. It shall not be permitted for the plumbing, hangers and supports below the slab or below the framing to be in contact with soil or any assemblage of materials that is in contact with soil within the active zone. It shall not be permitted for a slab and plumbing to be lifted as an assembly to create the void-space unless the under-floor space is a crawlspace with access to allow inspection of plumbing after lifting.</p> <p>Exception: <u>It shall be permitted for the piping, fittings, hangers, and supports below the slab or below the framing to be in contact with structural elements of the foundation that are designed to resist the effects of expansive soil swelling and shrinking in accordance with Section 1808.6.1 of the International Building Code.</u></p> <p><u>Organic materials subject to decay shall not be used for hangers, supports and soil retention systems. Materials subject to corrosion shall not be used for hangers, supports and soil retention systems unless protected in an approved manner.</u></p> <p>Where plumbing transitions to a buried condition beyond the perimeter of the foundation, an adequately flexible expansion joint shall be provided in the plumbing system to accommodate the effects of expansive soil swelling and shrinking.</p>					
P9-21	<p>Added new text as follows:</p> <p>306.2.4 Tracer wire. <u>For plastic sewer piping, an insulated copper tracer wire or other approved conductor shall be installed adjacent to and over the full length of the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate at the cleanout between the building drain and</u></p>			X	Adds \$15/LF plus 1 circuit per 150'LF	Improves safety and ability to locate plastic sewer pipe.

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																								
		Decrease	Neutral	Increase																										
		Sub Code:																												
	<u>building sewer. The tracer wire size shall be not less than 14 AWG and the insulation type shall be listed for direct burial.</u>																													
P10-21	Revised footnote f. to TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a (See Sections 403.1.1 and 403.2): f. The required number and type of plumbing fixtures for <u>indoor and</u> outdoor public swimming pools shall be in accordance with Section 609 of the International Swimming Pool and Spa Code.	X			Decrease \$4000 per Fixture	Indoor public swimming pools require fewer plumbing fixtures per swimming pool and spa code than required by plumbing code.																								
P13-21	Revised as follows: 311.1 General. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewer <u>non-sewered</u> type shall conform to PSAI Z4.3 or to IAPMO/ISO 30500.		X			Offers another option.																								
P14-21	Add new text as follows: 312.4 Drainage and vent vacuum test. <u>The portion of the drainage and vent system under test shall be evacuated of air by a vacuum type pump to achieve a uniform gauge pressure of negative 5 pounds per square inch or a negative 10 inches of mercury column (negative 34 kPa). This pressure shall be held without the removal of additional air for a period of 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperatures or the seating of gaskets shall be made prior to the beginning of the test period.</u>	X				Introduces cheaper pipe pressure testing alternative.																								
P17-21 Part I & P21-21	Revised as follows: TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a (See Sections 403.1.1 and 403.2) Portions of table not shown remain unchanged.		X			Brings the table in alignment with what is existing industry practice.																								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">NO.</th> <th rowspan="2">CLASSIFICATION</th> <th rowspan="2">DESCRIPTION</th> <th colspan="2">WATER CLOSETS (URINALS: SEE SECTION 424.2)</th> <th colspan="2">LAVATORIES</th> <th rowspan="2">BATHTUBS/SHOWERS</th> <th rowspan="2">DRINKING FOUNTAIN (SEE SECTION 410)</th> <th rowspan="2">OTHER</th> </tr> <tr> <th>MALE</th> <th>FEMALE</th> <th>MALE</th> <th>FEMALE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER	MALE	FEMALE	MALE	FEMALE															
NO.	CLASSIFICATION				DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES				BATHTUBS/SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER																
		MALE	FEMALE	MALE		FEMALE																								

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY						IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
							Decrease	Neutral	Increase		
Sub Code:											
2	Business	Buildings for the transaction of business, non-medical professional services, other services involving merchandise, office buildings, banks, ambulatory care, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80	—	1 per 100					
		Ambulatory care facilities and Outpatient clinics	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 50		1 per 100				
5	Institutional	Alcohol and drug centers	1 per 10 care recipients	1 per 10 care recipients	1 per 8 care recipients						
		Congregate care facilities									
		Group homes									
		Halfway houses									
		Social rehabilitation facilities									
		Foster care facilities									
		Footnote b									
		Assisted living and residential board and care facilities with care recipients who receive Custodial care facilities	Sleeping units for care recipients Footnote c	1 per 24 sleeping units	1 per 24 sleeping units	1 per 8 sleeping units	1 per 100				
		Dwelling units for care recipients	1 per dwelling unit	1 per dwelling unit	1 per dwelling unit						
		Employee facilities	1 per 60 care recipient units	1 per 60 care recipient units		1 per 100					
		Visitor facilities	1 per 75 care recipient units	1 per 75 care recipient units							
		Nursing homes	Sleeping units for care recipients Footnote c	1 per 2 care recipient sleeping units	1 per 2 care recipient sleeping units	1 per 8 care recipient sleeping units					
Employee facilities	1 per 60 care recipient units	1 per 60 care recipient sleeping units		1 per 100							
Visitor facilities	1 per 75 care recipient units	1 per 75 care recipient sleeping rooms									
Footnote b Hospitals	Sleeping units for care recipients	1 per 400 care recipient sleeping unit	1 per 400 care recipient sleeping unit	1 per 46 100 care recipient sleeping unit	1 per 100						

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY						IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
							Decrease	Neutral	Increase		
							Sub Code:				
				Care recipient treatment areas	1 per 25 care recipient treatment rooms	1 per 50 care recipient treatment rooms		1 per 100			
				Employee facilities	1 per 25 care recipient sleeping units or treatment room	1 per 25 care recipient sleeping units or treatment room	1 per 50 care recipient sleeping units or treatment room		1 per 100		
				Visitor facilities	1 per 75 care recipient sleeping room or treatment room	1 per 75 care recipient sleeping room or treatment room	1 per 50 care recipient sleeping room or treatment room		1 per 500		
				Employees in hospitals and nursing homes ^b	1 per 25	1 per 35	—	1 per 100			
				Visitors in hospitals and nursing homes	1 per 75	1 per 100	—	1 per 500			
				Prisons ^b	1 per cell	1 per cell	1 per 15	1 per 100			
				Reformatories, detention centers, and correctional centers ^b	Cells	1 per 15	1 per 15	1 per 15	1 per 100		
					Congregate Living Facilities	1 per 15	1 per 15	1 per 15	1 per 100		
					Employees in reformatories, detention centers and correctional centers ^b	1 per 25	1 per 35	—	1 per 100		
		Residential		Congregate living facilities with 16 or fewer persons-care recipients receiving custodial care	1 per 10 care recipients	1 per 10 care recipients	1 per 8 care recipients	1 per 100			
P24-21 Part I	Revised as follows: 403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required Exceptions: 2. Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple-user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall. 403.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex. Exceptions:							X			Editorial.

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by all persons regardless of sex and privacy is provided for water closets and urinals in accordance with Section 405.3.4 and for urinals in accordance with Section 405.3.5.</p> <p>405.3.5 Urinal partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater. <u>Urinals located in facilities designed for the use of all persons regardless of sex shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.</u></p> <p>Exceptions:</p>					
P25-21	<p>Revised as follows:</p> <p>403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table 403.1. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number.</p> <p>Exceptions:</p> <p>3. Distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 403.1.2.</p>		X			Change for consistency.

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																								
		Decrease	Neutral	Increase																										
Sub Code:																														
	<p>403.1.2 Single-user toilet and bathing room fixtures. The plumbing fixtures located in single-user toilet or single-user and bathing rooms, including family or assisted-use toilet and bathing rooms, shall contribute toward the total number of required plumbing fixtures for a building or tenant space.,and <u>The number of fixtures in single-user toilets, single-user bathing fixtures and family or assisted-use toilets shall be deducted proportionately from the required gender ratios of Table 403.1. Single-user toilet and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified as being available for use by all persons regardless of sex. The total number of fixtures shall be permitted to be based on the required number of separate facilities or based on the aggregate of any combination of single-user or male and female designated multi-user facilities.</u></p>																													
P26-21	<p>Revised as follows: SECTION 310 — WASHROOM AND TOILET FACILITIES ROOM REQUIREMENTS 310.1 Light and ventilation. Washrooms and toilet rooms <u>Toilet facilities</u> shall be illuminated and ventilated in accordance with the International Building Code and International Mechanical Code . 310.3 Interior finish. Interior finish surfaces of toilet <u>facilities</u> rooms shall comply with the International Building Code. TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a (See Sections 403.1.1 and 403.2) Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th rowspan="2">NO.</th> <th rowspan="2">CLASSIFICATION</th> <th rowspan="2">DESCRIPTION</th> <th colspan="2">WATER CLOSETS (URINALS: SEE SECTION 424.2)</th> <th colspan="2">LAVATORIES</th> <th rowspan="2">BATHTUBS/ SHOWERS</th> <th rowspan="2">DRINKING FOUNTAIN (SEE SECTION 410)</th> <th rowspan="2">OTHER</th> </tr> <tr> <th>MALE</th> <th>FEMALE</th> <th>MALE</th> <th>FEMALE</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Institutional</td> <td>Medical care recipients in hospitals and nursing homes</td> <td colspan="2">1 per room^c</td> <td colspan="2">1 per room^c</td> <td>1 per 15</td> <td>1 per 100</td> <td>1 service sink per floor</td> </tr> </tbody> </table> <p>c. A single-user <u>toilet facility</u> occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted provided that each patient sleeping unit has direct access to the toilet room and provision for privacy for the toilet room user is provided.</p>	NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER	MALE	FEMALE	MALE	FEMALE	5	Institutional	Medical care recipients in hospitals and nursing homes	1 per room ^c		1 per room ^c		1 per 15	1 per 100	1 service sink per floor		X			Change for consistency.
NO.	CLASSIFICATION				DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES				BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER																
		MALE	FEMALE	MALE		FEMALE																								
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Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>403.1.2 Fixtures in Single-user toilet facilities and bathing room fixtures. The plumbing fixtures located in single-user toilet facility and <u>single-user</u> bathing rooms, including family or assisted-use toilet <u>facilities</u> and bathing rooms that are required by Section 1110.2.1 of the International Building Code, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single user toilet <u>facilities</u> and bathing rooms, and family or assisted-use toilet facilities rooms and bathing rooms shall be identified as being available for use by all persons regardless of their sex. The total number of fixtures shall be permitted to be based on the required number of separate facilities or based on the aggregate of any combination of single-user or separate facilities.</p> <p>403.1.3 Lavatory distribution. Where two or more toilet <u>facilities</u> rooms are provided for each sex, the required number of lavatories shall be distributed proportionately to the required number of water closets.</p> <p>403.2 Separate facilities. Where plumbing fixtures are required, separate <u>toilet</u> facilities shall be provided for each sex.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Separate <u>toilet</u> facilities shall not be required for dwelling units and sleeping units. 2. Separate <u>toilet</u> facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer. 3. Separate <u>toilet</u> facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer. 4. Separate <u>toilet</u> facilities shall not be required in business occupancies in which the maximum occupant load is 25 or fewer. 5. Separate <u>toilet</u> facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2. 6. Separate <u>toilet</u> facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets is provided in accordance with Section 405.3.4. Urinals shall be located in 					

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.</p> <p>403.3.1 Access. The route to the public toilet facilities required by Section 403.3 shall not pass through kitchens, storage rooms or closets. Access to the required toilet facilities shall be from within the building or from the exterior of the building. The public shall have access to the required toilet facilities at all times that the building is occupied.</p> <p>403.3.2 Prohibited toilet room location for toilet facilities. Toilet facilities rooms shall not open directly into a room used for the preparation of food for service to the public.</p> <p>403.3.5 Pay <u>toilet</u> facilities. Where pay <u>toilet</u> facilities are installed, such toilet facilities shall be in excess of the required minimum toilet facilities. Required <u>toilet</u> facilities shall be free of charge.</p> <p>403.3.6 Door locking. Where a toilet <u>facility room</u> is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet <u>facilities rooms</u>.</p> <p>403.4 Signage. Required public toilet facilities shall be provided with signs that designate the sex, as required by Section 403.2. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111 of the International Building Code.</p> <p>405.3.2 Public lavatories. In employee and public toilet <u>facilities rooms</u>, the required lavatory shall be located in the same room as the required water closet.</p> <p>405.3.4 Water closet compartment. Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door. 2. Toilet <u>facilities rooms</u> located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment. 					

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>3. This provision is not applicable to toilet areas located within Group I-3 housing areas.</p> <p>405.3.5 Urinal partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Urinal partitions shall not be required in a single occupant or family/assisted-use toilet facility room with a lockable door. 2. Toilet facilities rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions. 					
P32-21	<p>Deleted without substitution:</p> <p>403.2.1 Family or assisted-use toilet facilities serving as separate facilities. Where a building or tenant space requires a separate toilet facility for each sex and each toilet facility is required to have only one water closet, two family or assisted-use toilet facilities shall be permitted to serve as the required separate facilities. Family or assisted-use toilet facilities shall not be required to be identified for exclusive use by either sex as required by Section 403.4.</p>		X			Removes redundancy.
P35-21	<p>Revised as follows:</p> <p>403.3.6 Door locking. Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms.</p> <p>Exception: <u>The egress door of a multiple occupant toilet room shall be permitted to be lockable from inside the room where all the following criteria are met:</u></p> <ol style="list-style-type: none"> <u>1. The egress door shall be lockable from the inside of the room only by authorized personnel by the use of a key or other approved means.</u> 		X			Improves occupant safety.

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>2. The egress door shall be readily openable from the inside of the toilet room in accordance with IBC Section 1010.2.</u></p> <p><u>3. The egress door shall be capable of being unlocked from outside the room with a key or other approved means.</u></p>					
P36-21	<p>Revised as follows: 403.4 Signage. Required public facilities shall be provided with signs that designate the <u>indicate whether the facility is to be used by males, by females, or by all persons regardless of sex,</u> as required by Section 403.2. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111 of the International Building Code.</p>		X			Provides consistency across related code sections.
P40-21	<p>Revise as follows: 407.2 Bathtub waste outlets and overflows. Bathtubs shall be equipped with a waste outlet that is not less than 1/2 inches (38 mm) in diameter. The waste outlet shall be equipped with a watertight stopper. Where an overflow is installed in a <u>bathtub, the piping from the overflow outlet shall be connected upstream of the fixture trap. The overflow outlet shall discharge to the trap whether the waste outlet is closed or open. the overflow shall be not less than 1/2 inches (38 mm) in diameter.</u></p>		X			Clarification.
P41-21	<p>Revised as follows: 410.1 Approval. Drinking fountains, water coolers and water dispensers shall conform to NSF 61, Section 9. Drinking fountains shall also conform to ASME A112.19.1/CSA B45.2, or ASME A112.19.2/CSA B45.1 <u>or ASME A112.19.3/CSA B45.4.</u> Electrically operated, refrigerated drinking water coolers and water dispensers shall be listed and labeled in accordance with UL 399.</p>		X			Clarification.
P46-21	<p>Revise as follows: 412.10 Head shampoo sink faucets. Head shampoo sink faucets shall be supplied with hot water that is limited to not more than 120°F (49°C). Each faucet shall have integral check valves to prevent crossover flow between the hot and cold-water supply connections. The means for regulating the maximum temperature shall be one of the following:</p>		X			Adds another option.

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70. 2. A water heater conforming to ASSE <u>1082</u> or 1084. 3. A temperature-actuated, flow-reduction device conforming to ASSE 1062.					
P47-21	Revised as follows: 412.2 Hand showers. Hand-held showers shall conform to ASME A112.18.1/CSA B125.1. Hand-held showers shall provide backflow protection in accordance with ASME A112.18.1/CSA B125.1 or shall be protected against backflow by a device complying with ASME A112.18.3 or ASSE 1014.		X			Adds another option.
P49-21	Added new text as follows: 419.6 Soap dispenser. Soap dispensers shall be provided for <u>public lavatories</u> .			X	Depends on type of dispenser	Promotes good hygiene.
P50-21	Revised as follows: 423.3 Footbaths and pedicure baths. The water supplied to specialty plumbing fixtures, such as pedicure chairs having an integral foot bathtub and footbaths, shall be limited to not greater than 120°F (49°C) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/ CSA B125.70 or by a water heater complying with <u>ASSE 1082</u> or 1084.		X			Clarification.
P51-21	Modified as Follows: 423.4 412.12 Electrically heated or cooled water dispensers. All potable water dispensers directly connected to the plumbing system shall comply with one of the following: 1. Beverage faucets shall comply with ASME A112.18.1/CSA B125.1 2. Dispensers that supply Electrically heated or cooled water dispensers shall comply with ASSE 1023. 3. <u>Electronic devices that heat water shall comply with UL 499</u>		X			Enforcing common practice.
P52-21	Revised as follows: 424.2 Substitution for water closets. In each bathroom or toilet room, urinals shall not be substituted for more than 67 percent of the required water closets <u>for males according to Table 403.1</u> in assembly and educational occupancies. Urinals shall not be substituted for more than 50 percent of the required <u>water closets for males according to Table 403.1</u> in all other occupancies.		X			Provides consistency across related code sections.

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE										
		Decrease	Neutral	Increase												
Sub Code:																
P54-21 Part I	<p>Add new text as follows: 501.9 Lead Content. Water heaters part of the potable water distribution system shall comply with NSF 372 and shall have a weighted average lead content of 0.25% or less.</p>		X			Consistency with SDWA.										
P55-21	<p>Revised as follows: 504.7 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following: 1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness. 2. Plastic not less than 0.036 inch (0.9 mm) in thickness. 3. Other approved materials. 4. A plastic pan installed beneath a gas fired water heater shall be constructed of material having a flame spread index of 25 or less and a smoked developed index of 450 or less when tested in accordance with ASTM E84 or UL 723. 5. Water heaters installed in pans shall comply with Section 314.2.3.2 A plastic pan installed beneath a gas fired water heater shall be constructed of material having a flame spread index of 25 or less and a smoked developed index of 450 or less when tested in accordance with ASTM E84 or UL723. Water heaters installed in pans shall comply with Section 314.2.3.2</p>		X			Editorial clarification.										
P61-21 Part I	<p>Revised as follows: TABLE 605.4 WATER DISTRIBUTION PIPE Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MATERIAL</th> <th style="width: 50%;">STANDARD</th> </tr> </thead> <tbody> <tr> <td>Stainless steel pipe (Type 304/304L)</td> <td>ASTM A269/A269M; ASTM A312; ASTM A778</td> </tr> <tr> <td>Stainless steel pipe (Type 316/316L)</td> <td>ASTM A269/A269M; ASTM A312; ASTM A778</td> </tr> <tr> <td>Stainless steel tubing (Type 304/304L)</td> <td>ASTM A269/A269M; ASTM A312; ASTM A778</td> </tr> <tr> <td>Stainless steel tubing (Type 316/316L)</td> <td>ASTM A269/A269M; ASTM A312; ASTM A778</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Stainless steel pipe (Type 304/304L)	ASTM A269/A269M; ASTM A312; ASTM A778	Stainless steel pipe (Type 316/316L)	ASTM A269/A269M; ASTM A312; ASTM A778	Stainless steel tubing (Type 304/304L)	ASTM A269/A269M; ASTM A312; ASTM A778	Stainless steel tubing (Type 316/316L)	ASTM A269/A269M; ASTM A312; ASTM A778		X			Adds another use option.
MATERIAL	STANDARD															
Stainless steel pipe (Type 304/304L)	ASTM A269/A269M; ASTM A312; ASTM A778															
Stainless steel pipe (Type 316/316L)	ASTM A269/A269M; ASTM A312; ASTM A778															
Stainless steel tubing (Type 304/304L)	ASTM A269/A269M; ASTM A312; ASTM A778															
Stainless steel tubing (Type 316/316L)	ASTM A269/A269M; ASTM A312; ASTM A778															
P63-21 Part I	<p>Revised as follows: TABLE 605.5 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MATERIAL</th> <th style="width: 50%;">STANDARD</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	MATERIAL	STANDARD				X			Adds another use option.						
MATERIAL	STANDARD															

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE						
		Decrease	Neutral	Increase								
Sub Code:												
	<table border="1"> <tr> <td>Stainless steel (Type 304/304L)</td> <td>ASTM A269; ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226</td> </tr> <tr> <td>Stainless steel (Type 316/316L)</td> <td>ASTM A269; ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226</td> </tr> <tr> <td>Steel</td> <td>ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548; ASTM F3226</td> </tr> </table>	Stainless steel (Type 304/304L)	ASTM A269; ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226	Stainless steel (Type 316/316L)	ASTM A269; ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226	Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548; ASTM F3226					
Stainless steel (Type 304/304L)	ASTM A269; ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226											
Stainless steel (Type 316/316L)	ASTM A269; ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226											
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P64-21 Part I	<p>Revised as follows: TABLE 605.5 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Fittings for cross-linked polyethylene (PEX) plastic tubing</td> <td>ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5		X		Adds a standard for PEX and PERT fittings.			
MATERIAL	STANDARD											
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5											
P65-21 Part I	<p>Revised as follows: TABLE 605.5 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Fittings for cross-linked polyethylene (PEX) plastic tubing</td> <td>ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348; CSA B137.5</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348 ; CSA B137.5		X		Adds a standard for PEX and PERT fittings.			
MATERIAL	STANDARD											
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348 ; CSA B137.5											
P67-21	<p>Revised as follows: TABLE 605.5 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Metal (brass copper alloy) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)</td> <td>ASTM F1974</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Metal (brass copper alloy) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974		X		Editorial clarification.			
MATERIAL	STANDARD											
Metal (brass copper alloy) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974											
P68-21 Part I	<p>Revised as follows: TABLE 605.7 VALVES Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Stainless steel (Type 304/304L)</td> <td>IAPMO Z1157, ASME A112.4.14</td> </tr> <tr> <td>Stainless steel (Type 316/316L)</td> <td>IAPMO Z1157, ASME A112.4.14</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Stainless steel (Type 304/304L)	IAPMO Z1157, ASME A112.4.14	Stainless steel (Type 316/316L)	IAPMO Z1157, ASME A112.4.14		X		Added standard option.	
MATERIAL	STANDARD											
Stainless steel (Type 304/304L)	IAPMO Z1157, ASME A112.4.14											
Stainless steel (Type 316/316L)	IAPMO Z1157, ASME A112.4.14											
P74-21 Part I	<p>Revised as follows: 605.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe manufacturer’s installation instructions. <u>Solvent-cemented joints shall be permitted above or below ground.</u> Where such instructions require that a primer be used, the primer shall be applied to the joint surfaces and a solvent cement orange in color and conforming to ASTM F493 shall be applied to the joint surfaces. The joint shall be made while the cement is fluid and in accordance with ASTM D2855.</p>		X		Clarifies joint making.							

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CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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		Sub Code:				
	Where such instructions allow for a one-step solvent cement, yellow in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet and in accordance with ASTM D2846 or ASTM F493 . ASTM F3328. Solvent-cemented joints shall be permitted above or below ground.					
P75-21 Part I	Revised as follows: 605.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe manufacturer’s installation instructions. Where such instructions require that a primer be used, the primer shall be applied to the joint surfaces and a solvent cement orange in color and conforming to ASTM F493 shall be applied to the joint surfaces. Where such instructions allow for a one-step solvent cement, yellow <u>or green</u> in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet and in accordance with ASTM D2846 or ASTM F493. Solvent-cemented joints shall be permitted above or below ground.		X			Increase cement contrast.
P76-21 Part I	Revised as follows: 605.15.2 Solvent cementing. Joint surfaces shall be clean and free from moisture, and an approved primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. The joint shall be made while the cement is wet, and in accordance with ASTM D2846 or ASTM F493 ASTM D2855. Solvent cement joints shall be permitted above or below ground. Exception: A primer is not required where all of the following conditions apply: <ol style="list-style-type: none"> 1. The solvent cement used is third-party certified as conforming to ASTM F493. 2. The solvent cement used is yellow in color. 3. The solvent cement is used only for joining / -inch (12.7 mm) through 2-inch-diameter (51 mm) CPVC/AL/CPVC pipe and CPVC fittings. 4. The CPVC fittings are manufactured in accordance with ASTM D2846. 5. The joint is made in accordance with ASTM F3328. 		X			Adds new standard.

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		Decrease	Neutral	Increase						
Sub Code:										
P85-21	<p>Revised as follows:</p> <p>606.1 Location of full-open valves. Full-open valves shall be installed in the following locations:</p> <ol style="list-style-type: none"> 1. On the building water service pipe from the public water supply near the curb. 2. On the water distribution supply pipe at the entrance into the structure. <ol style="list-style-type: none"> 2.1. In multiple-tenant buildings, <u>three stories or less in height</u>, where a common water supply piping system is installed to supply other than one- and two-family dwellings, a main shutoff valve shall be provided for each tenant. 3. On the discharge side of every water meter. 4. On the base of every water riser pipe in occupancies other than multiple-family residential occupancies that are two stories or less in height and in one- and two-family residential occupancies. 5. On the top of every water down-feed pipe in occupancies other than one- and two-family residential occupancies. 6. On the entrance to every water supply pipe to a dwelling unit, except where supplying a single fixture equipped with individual stops. 7. On the water supply pipe to a gravity or pressurized water tank. 8. On the water supply pipe to every water heater. 	X			Decrease \$750 per Shutoff location	Change adds a 3-story height limit on multi-tenant buildings requiring main shut-off valve for each tenant.				
P87-21 Part I	<p>Revised as follows:</p> <p>TABLE 604.4 MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">PLUMBING FIXTURE OR FIXTURE FITTING</th> <th style="text-align: left;">MAXIMUM FLOW RATE OR QUANTITY^b</th> </tr> </thead> <tbody> <tr> <td>Shower head^{a,c}</td> <td align="center">2.0 gpm at 80 psi</td> </tr> </tbody> </table> <p>For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.</p> <p>a. A hand-held shower spray is a shower head. b. Consumption tolerances shall be determined from referenced standards. c. Shower heads shall comply with <u>all requirements for high-efficiency showerheads in ASME A112.18.1-2020/CSA B125.1-2020. USEPA WaterSense Specification for Showerheads.</u></p> <p>USEPA WaterSense Specification for Showerheads Version 1.1, July 26, 2018</p>	PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY ^b	Shower head ^{a,c}	2.0 gpm at 80 psi		X			Reduces unnecessary water use.
PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY ^b									
Shower head ^{a,c}	2.0 gpm at 80 psi									

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																				
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Sub Code:																																																										
P89-21	Added new text as follows: 607.2.1 Commercial energy provisions. In occupancies that are required to comply with the Commercial provisions of the International Energy Conservation Code, the developed length of hot or tempered water piping shall limited in accordance with Sections C404.5.1 through C404.5.2.1 of that code.		X			Clarification.																																																				
P92-21	Revised as follows: TABLE 608.1 APPLICATION OF BACKFLOW PREVENTERS Portions of table not shown remain unchanged.		X			Updates.																																																				
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P106-21	Revised as follows: TABLE 702.3 BUILDING SEWER PIPE		X			Editorial clarification.																																																				

Table 2. 2021 IPC Changes Cost Impact

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P107-21	Revised as follows: Added ASTM F2763-16 to TABLE 702.3 BUILDING SEWER PIPE		X			Adds another option.																												
P107-21	Revised as follows: Added ASTM F2947/F2947M-20 to TABLE 702.3 BUILDING SEWER PIPE		X			Adds another option.																												
P111-21	Revised as follows: 702.6 Chemical waste drainage system. A chemical waste <u>drainage system, including its vent system, shall be completely separated independent from the sanitary drainage system. Separate drainage systems for chemical waste and vent pipes shall conform to one of the standards indicated in Table 702.6.</u> The chemical waste shall be treated in accordance with Section 803.2 before discharging to the sanitary drainage system. Separate drainage systems for chemical wastes and vent pipes shall be of an approved material that is Chemical waste drainage system pipe and fitting materials shall be resistant to suitable for the temperature of the waste, corrosion and degradation for the concentrations of chemicals involved <u>per manufacturer recommendations.</u>		X			Helps in the piping approval process																												

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE			
		Decrease	Neutral	Increase					
		Sub Code:							
	<p>901.3 Chemical waste drainage vent systems. The vent system for a chemical waste <u>drainage</u> system shall be independent of the sanitary vent system and shall terminate separately any sanitary drainage vent system. <u>The termination of a chemical waste drainage vent system shall be through the roof to the outdoors or to an air admittance valve that complies with ASSE 1049. Air admittance valves for chemical waste drainage systems shall be constructed of one of the materials approved in accordance with Section</u> listed in Table 702.6 and shall be tested for chemical resistance in accordance with ASTM F1412. Added new text as follows:</p> <p>902.1.1 Chemical waste drainage system vents. The pipe and fitting materials for a chemical waste drainage vent system shall <u>be in accordance with Section 702.6. The methods utilized for construction and installation of such venting system shall be in accordance with the pipe and fitting manufacturers' instructions.</u></p>								
P117-21 Part I	<p>Revised as follows:</p> <p>705.10.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F656 shall be applied. Solvent cement not purple in color and conforming to ASTM D2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D2855. Solvent-cement joints shall be permitted above or below ground.</p> <p>Exception: A primer is not required where both of the following conditions apply:</p> <ol style="list-style-type: none"> 1. The solvent cement used is third-party certified as conforming to ASTM D2564. 2. The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in non-pressure applications in sizes up to and including 4 inches (102 mm) in diameter. 3. The joint is made in accordance with ASTM F3328. 		X		Adds another method of joining piping components,				
P120-21 Part I	<p>Revised as follows:</p> <p>TABLE 702.1 ABOVE-GROUND DRAINAGE AND VENT PIPE Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MATERIAL</th> <th style="width: 50%;">STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyolefin pipe</td> <td>ASTM F1412; ASTM F3371; CSA B181.3</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyolefin pipe	ASTM F1412; ASTM F3371; CSA B181.3		X		Adds another option.
MATERIAL	STANDARD								
Polyolefin pipe	ASTM F1412; ASTM F3371; CSA B181.3								

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CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE								
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	<p>TABLE 702.2 UNDERGROUND DRAINAGE AND VENT PIPE Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyolefin pipe</td> <td>ASTM F714; ASTM F1412; ASTM F3371; CSA B181.3</td> </tr> </tbody> </table> <p>TABLE 702.2 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyolefin</td> <td>ASTM F1412; ASTM F3371; CSA B181.3</td> </tr> </tbody> </table> <p>705.13.1 Heat-fusion joints. Heat-fusion joints for polyolefin pipe and tubing joints shall be installed with socket-type heat-fused polyolefin fittings or electrofusion polyolefin fittings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM F1412, <u>ASTM F3371</u> or CSA B181.3.</p>	MATERIAL	STANDARD	Polyolefin pipe	ASTM F714; ASTM F1412; ASTM F3371; CSA B181.3	MATERIAL	STANDARD	Polyolefin	ASTM F1412; ASTM F3371; CSA B181.3					
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Polyolefin	ASTM F1412; ASTM F3371; CSA B181.3													
	<p>Revised as follows: 705.16 Joints between different materials. Joints between different piping materials shall be made with a mechanical joint of the compression or mechanical sealing type conforming to ASTM C1173, ASTM C1460 or ASTM C1461. Connectors and adapters shall be approved for the application and such joints shall have an elastomeric seal conforming to ASTM C425, ASTM C443, ASTM C564, ASTM C1440, ASTM F477, CSA A257.3M or CSA B602, or as required in Sections 705.16.1 through 705.16.7. Joints between glass pipe and other types of materials shall be made with adapters having a TFE seal. Joints shall be installed in accordance with the manufacturer’s instructions. Added new text as follows: 705.2.4 Mechanical joints above ground. <u>Mechanical joint couplings used above ground to connect ABS pipe to ABS pipe shall be of the shielded type and shall be marked by the manufacturer as being recommended for the application.</u> 705.10.5 Mechanical joints above ground. <u>Mechanical joint couplings used above ground to connect PVC</u></p>		X			Clarification.								
P135-21	<p>Revised as follows: TABLE 1102.7 PIPE FITTINGS Portions of table not shown remain unchanged.</p>		X			Adds another option.								

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P136-21	<p>Revised as follows:</p> <p>TABLE 1102.4 BUILDING STORM SEWER PIPE Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; <u>CSA B182.8</u></td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; <u>CSA B182.8</u>		X			Clarification.				
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; <u>CSA B182.8</u>													
P138-21	<p>Revised as follows:</p> <p>TABLE 1102.7 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td><u>Polypropylene (PP) plastic pipe</u></td> <td><u>ASTM F2764</u></td> </tr> </tbody> </table> <p>TABLE 1102.4 BUILDING STORM SEWER PIPE Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polypropylene (PP) pipe</td> <td><u>ASTM F2764</u>; ASTM F2881; CSA B182.13</td> </tr> </tbody> </table>	MATERIAL	STANDARD	<u>Polypropylene (PP) plastic pipe</u>	<u>ASTM F2764</u>	MATERIAL	STANDARD	Polypropylene (PP) pipe	<u>ASTM F2764</u> ; ASTM F2881; CSA B182.13		X			Adds another option.
MATERIAL	STANDARD													
<u>Polypropylene (PP) plastic pipe</u>	<u>ASTM F2764</u>													
MATERIAL	STANDARD													
Polypropylene (PP) pipe	<u>ASTM F2764</u> ; ASTM F2881; CSA B182.13													
P139-21	<p>Revised as follows:</p> <p>TABLE 1102.7 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td><u>Polypropylene (PP) plastic pipe</u></td> <td><u>ASTM F2881/F2881M</u></td> </tr> </tbody> </table>	MATERIAL	STANDARD	<u>Polypropylene (PP) plastic pipe</u>	<u>ASTM F2881/F2881M</u>		X			Adds another option.				
MATERIAL	STANDARD													
<u>Polypropylene (PP) plastic pipe</u>	<u>ASTM F2881/F2881M</u>													
P140-21 PART I	<p>Revised as follows:</p> <p>TABLE 1102.5 SUBSOIL DRAIN PIPE Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F495; ASTM F667; CSA B182.1; CSA B182.6; CSA B182.8</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F495; ASTM F667; CSA B182.1; CSA B182.6; CSA B182.8					Deletes withdrawn standard.				
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F495; ASTM F667; CSA B182.1; CSA B182.6; CSA B182.8													

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE								
		Decrease	Neutral	Increase										
Sub Code:														
P142-21	Revised as follows: TABLE 1102.4 BUILDING STORM SEWER PIPE Portions of table not shown remain unchanged. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; <u>ASTM F2947</u></td> </tr> </tbody> </table> TABLE 1102.7 PIPE FITTINGS Portions of table not shown remain unchanged. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F2306/F2306M; <u>ASTM F2947/F2947M</u></td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; <u>ASTM F2947</u>	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; <u>ASTM F2947/F2947M</u>		X			Adds new sanitary sewer pipe option.
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; <u>ASTM F2947</u>													
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; <u>ASTM F2947/F2947M</u>													
P143-21 Part I	Revised as follows: TABLE 1102.7 PIPE FITTINGS Portions of table not shown remain unchanged. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F2306/F2306M; <u>ASTM F667/F667M</u></td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; <u>ASTM F667/F667M</u>		X			Highlights that the added standard covers both pipe and fittings				
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; <u>ASTM F667/F667M</u>													
P144-21	Revised as follows: TABLE 1102.7 PIPE FITTINGS Portions of table not shown remain unchanged. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyvinyl chloride (PVC) plastic</td> <td>ASTM D2665; ASTM D3311; ASTM F1866; <u>ASTM F3202</u></td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyvinyl chloride (PVC) plastic	ASTM D2665; ASTM D3311; ASTM F1866; <u>ASTM F3202</u>		X			Adds new fittings standard.				
MATERIAL	STANDARD													
Polyvinyl chloride (PVC) plastic	ASTM D2665; ASTM D3311; ASTM F1866; <u>ASTM F3202</u>													
G1-21 Part IV	Revised as follows: 1302.9 Pumping and control system. Mechanical equipment including pumps, valves and filters shall be easily accessible <u>have access and be removable</u> in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section 604 .		X			Clarification for consistency.								
G3-21 Part III	Added new definition as follows: <u>[BG] AMBULATORY CARE FACILITY.</u> <u>Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable.</u>		X											

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>Revised as follows:</p> <p>609.1 Scope. This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following occupancies: Group I-1, Group I- 2, Group B ambulatory care facilities, medical offices, research and testing laboratories, and Group F facilities manufacturing pharmaceutical drugs and medicines.</p>					
G44-21 Part III	<p>Revised as follows:</p> <p>606.2 Location of shutoff valves. Shutoff valves shall be installed in the following locations:</p> <ol style="list-style-type: none"> 1. On the fixture supply to each plumbing fixture other than bathtubs and showers in one- and two-family residential occupancies, and other than in individual <u>dwelling or</u> sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar occupancies. 2. On the water supply pipe to each sillcock. 3. On the water supply pipe to each appliance or mechanical equipment. <p>TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES (See Sections 403.1.1 and 403.2)</p> <p>Portions of table not shown remain unchanged.</p>		X		Clarification and coordination.	

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY						IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
							Decrease	Neutral	Increase		

Sub Code:

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
7	Residential	Hotels, motels, boarding houses (transient)	1 per dwelling or sleeping unit		1 per dwelling or sleeping unit		1 per dwelling or sleeping unit	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Apartment house	1 per dwelling or sleeping unit		1 per dwelling or sleeping unit		1 per dwelling or sleeping unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

S196-22	<p>Revised as follows: 307.2 Cutting, notching and boring in wood framing. or bored holes. A wood framing member shall not be cut, notched or bored in excess of limitations specified in the International Building Code. Added new text as follows: 307.3 Cutting and notching in cold-formed steel framing. The cutting and notching of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. Deleted without substitution: [BS] C101.5 Cutting, notching and boring holes in cold formed steel framing. Flanges and lips of load-bearing cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations,</p>		X		Provides clear and consistent criteria across all trades on how to field modify framing members and when modification of such members requires input from a
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Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>penetration spacing or minimum hole edge distance as prescribed by the registered design professional. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the registered design professional.</p> <p>[BS] C101.6 Cutting, notching and boring holes in nonstructural cold formed steel wall framing. Flanges and lips of nonstructural coldformed steel wall studs shall not be cut or notched. Holes in webs of nonstructural cold formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed 1 1/2 inches (38 mm) in width or 4 inches (102 mm) in length, and the holes shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.</p>					design professional.
S224-22	<p>Added new text as follows: <u>307.3 Cutting, notching and boring of wood framing.</u> The cutting, notching and boring of structural wood framing members shall comply with Section 2304.14 of the International Building Code.</p> <p>Deleted without substitution: [BS] C101.1 Joist notching. Notches on the ends of joists shall not exceed one fourth the joist depth. Holes bored in joists shall not be within 2 inches (51 mm) of the top or bottom of the joist, and the diameter of any such hole shall not exceed one third the depth of the joist. Notches in the top or bottom of joists shall not exceed one sixth the depth and shall not be located in the middle third of the span.</p> <p>[BS] C101.2 Stud cutting and notching. In exterior walls and bearing partitions, a wood stud shall not be cut or notched in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.</p> <p>[BS] C101.3 Bored holes. The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive</p>		X		Provides clear and consistent criteria across all trades on how to field modify framing members and when modification of such members requires input from a design professional.	

Table 2. 2021 IPC Changes Cost Impact

CODE CHANGE #	2024 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>doubled studs are so bored. The edge of the bored hole shall be not closer than 1/4 inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.</p>					

APPENDIX C

Table 3. 2024 IFGC Changes Cost Impact

CODE CHANGE #	2024 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
FG3-21	<p>Revise as follows: 407.2 Design and installation. Piping shall be supported with metal pipe hooks, metal pipe straps, metal bands, metal brackets, metal hangers or building structural components, suitable for the size of piping, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration. Piping shall be anchored to prevent undue strains on connected appliances and shall not be supported by other piping. Pipe hangers and supports shall conform to the requirements of MSS SP-58 and shall be spaced in accordance with Section 415. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the piping between anchors. The components of the supporting equipment shall be designed and installed so that they will not be disengaged by movement of the supported piping.</p>	X			Use of non-metallic pipe supports decrease support material cost by 35%	Expands choice of materials for hanging and space
FG7-21 Part II	<p>Revise as follows: 907.1 General. <u>Factory built cremation furnaces and commercial direct-fed incinerators shall be listed and labeled in accordance with UL 2790. Factory-built incinerators for domestic applications shall be listed and labeled in accordance with UL 791.</u> Incinerators and crematories cremation furnaces shall be listed and labeled in accordance with UL 791 and shall be installed in accordance with the manufacturer's instructions. Add new standard: <u>UL 2790-2010 Commercial Incinerators - with revisions through June, 2019</u></p>			X	Adds 7% total material cost to cremation furnaces and incinerators	Identifies correct standards
FG8-21	<p>Revise as follows: SECTION D103 GAS PIPING AND CONNECTIONS INSPECTIONS. 2. <i>Appliance Connector.</i> Verify that the <i>appliance</i> connection type is compliant with Section 411 of the International Fuel Gas Code. Inspect flexible <i>appliance</i> connections to determine if they are free of cracks, corrosion and signs of damage. Verify that there are no uncoated brass <u>copper alloy</u> connectors. Where connectors are determined to be unsafe or where an uncoated brass <u>copper alloy</u> connector is found, the appliance shutoff valve should be placed in the off position and the owner notified that the connector must be replaced. 3. <i>Piping Support.</i> Inspect <i>piping</i> to determine that it is adequately supported, that there is no undue stress on the <i>piping</i>, and if</p>		X			Editorial

Table 3. 2024 IFGC Changes Cost Impact

CODE CHANGE #	2024 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	there are any improperly capped pipe openings. 4. <i>Bonding</i> . Verify that the electrical bonding of gas <i>pipng</i> is compliant with Section 310 of the International Fuel Gas Code.					
G1-21 Part III	<p>Revise as follows:</p> <p>403.11.7 Lapped flanges. Lapped flanges shall be used only above ground or in exposed locations accessible <u>with access</u> for inspection.</p> <p>404.8.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in an accessible <u>a portion of the building with access</u> and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.</p> <p>404.14.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in an accessible <u>a portion of the building with access</u> and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.</p> <p>409.5.3 Located at manifold. Where the <i>appliance</i> shutoff valve is installed at a manifold, such shutoff valve shall be located within 50 feet (15 240 mm) of the <i>appliance</i> served and shall be readily accessible <u>have ready access</u> and be permanently identified. The <i>pipng</i> from the manifold to within 6 feet (1829 mm) of the <i>appliance</i> shall be designed, sized and installed in accordance with Sections 401 through 408.</p> <p>409.6 Shutoff valve for laboratories. Where provided with two or more fuel gas outlets, including table-, bench- and hood-mounted outlets, each laboratory space in educational, research, commercial and industrial <i>occupancies</i> shall be provided with a single dedicated shutoff valve through which all such gas outlets shall be supplied. The dedicated shutoff valve shall be readily accessible <u>have ready access</u>, be located within the laboratory space served, be located adjacent to the egress door from the space and shall be identified by <i>approved</i> signage stating “Gas Shutoff.”</p> <p>411.1.6 Unions. A union fitting shall be provided for <i>appliances</i> connected by rigid metallic pipe. Such unions shall be accessible <u>have access</u> and be located within 6 feet (1829 mm) of the <i>appliance</i>.</p>		X			Editorial

Table 3. 2024 IFGC Changes Cost Impact

CODE CHANGE #	2024 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>501.7.3 Connection to masonry fireplace flue. A connector shall extend from the <i>appliance</i> to the flue serving a masonry <i>fireplace</i> such that the flue gases are exhausted directly into the flue. The connector shall be accessible <u>have access</u> or <u>be</u> removable for inspection and cleaning of both the connector and the flue. <i>Listed</i> direct connection devices shall be installed in accordance with their listing.</p> <p>503.5.9 Cleanouts. Where a chimney that formerly carried flue products from liquid or solid fuel-burning appliances is used with an <i>appliance</i> using fuel gas, an accessible <u>a cleanout with access</u> shall be provided. The cleanout shall have a tight-fitting cover and shall be installed so its upper edge is not less than 6 inches (152 mm) below the lower edge of the lowest chimney inlet opening.</p> <p>503.12.6 Positioning. Draft hoods and draft regulators shall be installed in the position for which they were designed with reference to the horizontal and vertical planes and shall be located so that the relief opening is not obstructed by any part of the <i>appliance</i> or adjacent construction. The <i>appliance</i> and its draft hood shall be located so that the relief opening is accessible <u>has access</u> for checking vent operation.</p>					
G1-21 Part V	<p>Revise as follows: [M] 306.1 Access for maintenance and replacement. Appliances, control devices, heat exchangers and HVAC components that utilize energy shall be accessible <u>have access</u> for inspection, service, repair and replacement without disabling the function of a fire-resistance- rated assembly or removing permanent construction, other appliances, or any other <i>pipng</i> or ducts not connected to the <i>appliance</i> being inspected, serviced, repaired or replaced. A level working space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be provided in front of the control side to service an <i>appliance</i>.</p>		X			Editorial
S196-22	<p>Revise as follows: [BS] 302.6 Cutting, and notching and boring holes in cold-formed steel framing. <u>The cutting, and notching and boring of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. Flanges and lips of load-bearing, cold formed steel framing members shall not be cut or notched. Holes in webs of load bearing, cold formed steel framing</u></p>		X			Editorial

Table 3. 2024 IFGC Changes Cost Impact

CODE CHANGE #	2024 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations penetration spacing or minimum hole edge distance as prescribed by the <i>registered design professional</i>. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the <i>registered design professional</i>.</p> <p>Delete without substitution: [BS] 302.7 Cutting, notching and boring holes in non-structural cold formed steel wall framing. Flanges and lips of nonstructural cold formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed $\pm 1\frac{1}{2}$ inches (38 mm) in width or 4 inches (102 mm) in length, and the holes shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.</p>					
S224-22	<p>Revise as follows: [BS] 302.3 Cutting, notching and boring in wood members. The cutting, notching and boring of wood framing members shall comply with Sections 2308.3 of the <i>International Building Code</i>, 302.3.1 through 302.3.4.</p> <p>Delete without substitution: [BS] 302.3.2 Joist notching and boring. Notching at the ends of joists shall not exceed one fourth the joist depth. Holes bored in joists shall not be within 2 inches (51 mm) of the top and bottom of the joist and their diameters shall not exceed one third the depth of the member. Notches in the top or bottom of the joist shall not exceed one sixth the depth and shall not be located in the middle one third of the span. [BS] 302.3.3 Stud cutting and notching. In exterior walls and bearing partitions, any wood stud is permitted to be cut or notched to a depth not exceeding 25 percent of its width. Cutting or notching of studs to a depth not greater than 40 percent of the width of the stud is permitted in nonload-bearing partitions supporting no loads other than the weight of the partition. [BS] 302.3.4 Bored holes. The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall be not closer than $\frac{5}{8}$ inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.</p>		X		Editorial	

APPENDIX D

Table 4. 2024 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RM4-21	<p>2021 International Residential Code Revise as follows: M1402.1 General. Oil-fired central furnaces shall conform to be listed and labeled in accordance with ANSI /UL 727. Electric furnaces shall conform to <u>be listed and labeled</u> in accordance with UL 1995 or UL/CSA/ANCE 60335-2-40. M1403.1 Heat pumps. Electric heat pumps shall be <i>listed and labeled</i> in accordance with UL 1995 or UL/CSA/ANCE 60335-2-40. M1412.1 Approval of Listed equipment. Absorption systems shall be installed in accordance with the manufacturer's instructions. Absorption <i>equipment</i> shall comply be listed and labeled in accordance with UL 1995 or UL/CSA/ANCE 60335-2-40. M2006.1 General. Pool and spa heaters shall be installed in accordance with the manufacturer's installation instructions. Oil-fired pool heaters shall comply be listed and labeled in accordance with UL 726. Electric pool and spa heaters shall comply be listed and labeled in accordance with UL 1261. Pool and spa heat pump water heaters shall comply be listed and labeled in accordance with UL 1995, <u>or UL/CSA/ANCE 60335-2-40 or CSA C22.2 No. 236.</u> Exception: Portable residential spas and portable residential exercise spas shall comply be listed and labeled in accordance with UL 1563 or <u>CSA C22.2 No. 218.1.</u></p>		X			Clarification.
RM5-21	<p>M1404.1 Compliance. Refrigeration cooling <i>equipment</i> shall comply be listed and labeled in accordance with <u>UL 474, UL 484, UL 1995, or UL/CSA 60335-2-40.</u></p>		X			Editorial.
RM6-21	<p>Add new text as follows: M1411.2 Refrigeration system listing. Refrigeration systems using Group A2L refrigerants shall be listed and labeled to UL 60335-2-40/CAN/CSA C22.2 No. 60335-2-40. Refrigeration systems using Group A1 refrigerants shall be listed to UL 60335-2-40/CAN/CSA C22.2 No. 6-335-2-40 or UL 1995/CSA C22.2 No. 236. The equipment shall be installed in accordance with the listing. M1411.3 Refrigeration system installation. Refrigeration systems shall be installed in accordance with the manufacturer's installation instructions. After installation, the manufacturer's</p>		X			Editorial.

Table 4. 2024 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>installation instructions, owner's manuals, service manuals, and any other product literature provided with the equipment shall be attached to the indoor unit or left with the homeowner.</u></p> <p>M1411.4 Field installed accessories. <u>All Field installed accessories shall be installed in accordance with the accessory and equipment manufacturer's installation instructions. Accessories installed in the ductwork of Group A2L refrigeration systems shall not contain electric heating elements, open flames, or devices switching electrical loads greater than 2.5 kVA.</u></p> <p>M1411.5 Signs and identification. <u>Each refrigeration system using Group A2L refrigerant shall have the following information legibly and permanently indicated on a markable label provided by the equipment manufacturer.</u></p> <ol style="list-style-type: none"> <u>Contact information of the responsible company that installed the refrigeration system, and</u> <u>The system refrigerant charge and the refrigerant number.</u> <p>M1411.6 Refrigerant charge. <u>All refrigeration systems shall have refrigerant charge in compliance with the equipment manufacturer's installation instructions and the requirements of the listing. Group A2L refrigerant charge for an individual refrigeration system shall not exceed 34.5 lbs (15.7 kg).</u></p> <p>M1411.7 Group A2L refrigerant piping testing. <u>The piping system containing Group A2L refrigerant shall be tested in accordance with the manufacturer's installation instructions and the requirements of the listing.</u></p>					
RM8-21	<p>Add new text as follows:</p> <p>1502.6 Makeup air. <u>Installations exhausting more than 200 cfm (0.09 3/s) shall be provided with make up air.</u></p> <p>1502.6.1 Closet Installation. <u>Where a closet is designated for the installation of a clothes dryer, an opening having a area of not less than 100 sq. inches (0.0645 m²) for make up air shall be provided in the closet enclosure, or make up air shall be provided by other approved means.</u></p> <p>M1503.6 Makeup air required . <u>Where one or more gas, liquid or solid fuel-burning <i>appliance</i> that is neither direct-vent nor uses a mechanical draft venting system is located within a dwelling unit's air barrier, each exhaust system capable of exhausting in excess of 400 cubic feet per minute (0.19 m³/s) shall be mechanically or passively provided with makeup air at a</u></p>		X			Clarification.

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CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with not fewer than one outdoor air duct and damper complying with Section M1503.6.2.</p> <p>Exception: Makeup air is not required for exhaust systems installed for the exclusive purpose of space cooling and intended to be operated only when windows or other air inlets are open.</p> <p>M1503.6.1 Location . Kitchen exhaust makeup air that is ducted from the outdoors shall be discharged into the same room in which the exhaust system is located or into rooms or <i>duct systems</i> that communicate through one or more permanent openings with the room in which such exhaust system is located. Such permanent openings shall have a net cross-sectional area not less than the required area of the makeup air supply openings.</p>					
RM12-21	<p>Revise as follows:</p> <p>M1504.3 Exhaust openings. Air exhaust openings shall terminate as follows:</p> <ol style="list-style-type: none"> 1. Not less than 3 feet (914 mm) from property lines. 2. Not less than 3 feet (914 mm) from gravity air intake openings, operable windows and doors. 3. Not less than 10 feet (3048 mm) from mechanical air intake openings except where the <u>either of the following apply:</u> <ol style="list-style-type: none"> 3.1. <u>The exhaust opening is located not less than 3 feet (914 mm) above the air intake opening.</u> 3.2. <u>The exhaust opening is part of an approved a factory-built intake/exhaust combination termination fitting installed in accordance with the manufacturer's instructions, and the exhaust air is drawn from a living space.</u> 4. Openings shall comply with Sections R303.5.2 and R303.6. 		X		Reduces materials and labor expense required to offset exhaust duct terminations away from windows.	Clarification.
RM13-21	<p>Revise as follows:</p> <p>M1504.3 Exhaust openings. Air exhaust openings shall terminate as follows:</p> <ol style="list-style-type: none"> 1. Not less than 3 feet (914 mm) from property lines. 2. Not less than 3 feet (914 mm) from gravity air intake openings, operable windows and doors <u>except where the exhaust opening is located not less than 1 foot (305 mm)</u> 	X			Reduces materials and labor expense required to offset exhaust duct terminations	Simplification of code requirements.

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CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>above the gravity air intake opening, operable windows and doors.</u></p> <p>3. Not less than 10 feet (3048 mm) from mechanical air intake openings except where the exhaust opening is located not less than 3 feet (914 mm) above the air intake opening. Openings shall comply with Sections R303.5.2 and R303.6.</p>				away from windows.	
RM14-21	<p>Revise as follows:</p> <p>M1505.3 Exhaust equipment. Exhaust fans and whole-house mechanical ventilation fans shall be <i>listed and labeled</i> as providing the minimum required airflow in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51 <u>or HVI 916.</u></p>		X			Editorial.
RM16-21	<p>Revise as follows:</p> <p>[MP] BALANCED VENTILATION SYSTEM. A ventilation system where the total mechanical supply airflow and total mechanical exhaust airflow are simultaneously within 10 percent of their average. The balanced ventilation system airflow is the average of the mechanical supply and mechanical exhaust airflows.</p> <p><u>A ventilation system that simultaneously supplies outdoor air to and exhausts air from a space, where the mechanical supply airflow rate and the mechanical exhaust airflow rate are each within 10% of the average of the two airflow rates.</u></p> <p>M1505.4.3 Mechanical ventilation rate. The whole-house mechanical ventilation system shall provide outdoor air at a continuous rate not less than that determined in accordance with Table M1505.4.3(1) or not less than that determined by Equation 15-1.</p> <p>Ventilation rate in cubic feet per minute = (0.01 × total square foot area of house) + [7.5 × (number of bedrooms + 1)] (Equation 15-1)</p> <p>Exceptions:</p> <p>1. Ventilation rate credit. The minimum mechanical ventilation rate determined in accordance with Table M1505.4.3(1) or Equation 15-1 shall be reduced by 30 percent, provided that both of the following conditions apply:</p> <p>1.1. A ducted system supplies ventilation air directly to each bedroom and to one or more of the following rooms:</p> <p>1.1.1. Living room.</p> <p>1.1.2. Dining room.</p> <p>1.1.3. Kitchen.</p>		X			Editorial.

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CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1.2. The whole-house ventilation system is a <i>balanced ventilation system</i>.</p> <p>2. Programmed intermittent operation. The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate prescribed in Table M1505.4.3(1), by Equation 15-1 or by Exception 1 is multiplied by the factor determined in accordance with Table M1505.4.3(2).</p>					
RM17-21	<p>Add new text as follows: <u>M1506 LOCAL EXHAUST RATES</u> Revise as follows: M1505.4.4 M1506.1 Local exhaust rates. <i>Local exhaust systems shall be designed to have the capacity to exhaust the minimum airflow rate determined in accordance with Table M1505.5 4.4.</i> TABLE M1505.4.4 <u>M1506.1</u> MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE AND TWO FAMILY DWELLINGS Portions of table not shown remain unchanged. M1503.5 Kitchen exhaust rates. Where domestic kitchen cooking <i>appliances</i> are equipped with ducted range hoods or down-draft exhaust systems. <u>The exhaust rate shall equal or exceed the airflow required in Table M1505.5 at one or more speed settings.</u> the fans shall be sized in accordance with Section M1505.4.4. the minimum exhaust rate shall be in accordance with Section M1506.1 M1505.5 Local exhaust rates. <i>Local exhaust systems shall be designed to have the capacity to exhaust the minimum airflow rate determined in accordance with Table M1505.5 M1505.5 at one or more speed settings.</i></p>		X			Remove redundancy.
RM18-21	<p>Revise as follows: M1602.2 Return air openings. Return air openings for heating, <i>ventilation</i> and air-conditioning systems shall comply with all of the following:</p> <ol style="list-style-type: none"> Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another <i>appliance</i> located in the same room or space. 			X	Cost of adding return duct.	Provides another design option.

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CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2. The amount of return air taken from any room or space shall be not greater than the flow rate of supply air delivered to such room or space.</p> <p>3. Return and transfer openings shall be sized in accordance with the <i>appliance</i> or <i>equipment</i> manufacturer’s installation instructions, Manual D or the design of the <i>registered design professional</i>.</p> <p>4. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, mechanical room, boiler room, furnace room or unconditioned attic.</p> <p>Exceptions:</p> <p>1. Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen only, and are located not less than 10 feet (3048 mm) from the cooking <i>appliances</i>.</p> <p>2. Dedicated forced-air systems serving only the garage shall not be prohibited from obtaining return air from the garage.</p> <p>5. For other than dedicated HVAC systems, return air shall not be taken from indoor swimming pool enclosures and associated deck areas except where the air in such spaces is dehumidified,</p> <p>6. Taking return air from an unconditioned <i>crawl space</i> shall not be accomplished through a direct connection to the return side of a forced-air furnace. Transfer openings in the <i>crawl space</i> enclosure shall not be prohibited.</p> <p>7. Return air from one <i>dwelling unit</i> shall not be discharged into another <i>dwelling unit</i>.</p>					
RM 19-21	<p>Revise as follows:</p> <p>M1602.2 Return air openings. Return air openings for heating, <i>ventilation</i> and air-conditioning systems shall comply with all of the following:</p> <p>1. Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another <i>appliance</i> located in the same room or space.</p> <p>2. The amount of return air taken from any room or space shall be not greater than the flow rate of supply air delivered to such room or space.</p>			X	Cost of adding return duct.	Provides another design option.

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CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>3. Return and transfer openings shall be sized in accordance with the <i>appliance</i> or <i>equipment</i> manufacturer’s installation instructions, Manual D or the design of the <i>registered design professional</i>.</p> <p>4. Where return air is taken from a closet smaller than 30 ft² (2.8 m²) the return air shall be no more than 30 cfm (15 l/s), shall serve only the closet, and shall not require a dedicated supply duct.</p> <p>5. Where return air is taken from a closet smaller than 30 ft² (2.8 m²) the closet door shall be undercut a minimum of 1.5 inches (38 mm) or the closet shall include a louvered door or transfer grille with a minimum net free area of 30 inch² (194 cm²).</p> <p>4. <u>Where return air is taken from a closet the return air shall be no more than 30 cfm (15 l/s), shall serve only the closet, shall not require a dedicated supply duct and the closet door shall be undercut a minimum of 1.5 inches (38 mm) or the closet shall include a louvered door or transfer grille with a minimum net free area of 30 inch² (194 cm²).</u></p> <p>5 6. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, mechanical room, boiler room, furnace room or unconditioned attic.</p> <p>Exceptions:</p> <p>1. Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen only, and are located not less than 10 feet (3048 mm) from the cooking <i>appliances</i>.</p> <p>2. Dedicated forced-air systems serving only the garage shall not be prohibited from obtaining return air from the garage.</p> <p>3. <u>Return air taken from closets shall serve only the closet and may shall be permitted to be taken from closets that have no dedicated supply duct.</u></p> <p>5 6. For other than dedicated HVAC systems, return air shall not be taken from indoor swimming pool enclosures and associated deck areas except where the air in such spaces is dehumidified,</p> <p>6 7. Taking return air from an unconditioned <i>crawl space</i> shall not be accomplished through a direct connection to the return side of a forced-air furnace. Transfer openings in the <i>crawl space</i> enclosure shall not be prohibited.</p>					

Table 4. 2024 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY	IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	7 8. Return air from one <i>dwelling unit</i> shall not be discharged into another <i>dwelling unit</i> .					
RM20-21	<p>Revise as follows:</p> <p>M1602.2 Return air openings. Return air openings for heating, <i>ventilation</i> and air-conditioning systems shall comply with all of the following:</p> <ol style="list-style-type: none"> Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another <i>appliance</i> located in the same room or space. The amount of return air taken from any room or space <u>except mechanical rooms, boiler rooms or furnace rooms</u> shall be not greater than the flow rate of supply air delivered to such room or space. <u>Return air taken from mechanical rooms shall , boiler rooms or furnace rooms shall serve only the mechanical room and shall be permitted to be taken from mechanical rooms that have no dedicated supply duct.</u> Return and transfer openings shall be sized in accordance with the <i>appliance</i> or <i>equipment</i> manufacturer’s installation instructions, Manual D or the design of the <i>registered design professional</i>. <u>Where return air is taken from a mechanical room, boiler room, or furnace room with combustion appliances only sealed combustion appliances shall be permitted within the mechanical room.</u> <u>Where return air is taken from a mechanical room , boiler room, or furnace room the pressure differential across the mechanical room, boiler room or furnace room door shall be limited to 0.01 inch WC (2.5 pascals) or less by undercutting the door, or installing a louvered door or transfer grille, or by some other means.</u> <p>4 6. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, mechanical room, boiler room, furnace room or unconditioned attic.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen only, and are located not less than 10 feet (3048 mm) from the cooking <i>appliances</i>. 			X	Cost of adding return duct.	Provides another design option.

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		Decrease	None	Increase		
Sub Code:						
	<p>2. Dedicated forced-air systems serving only the garage shall not be prohibited from obtaining return air from the garage.</p> <p>5 <u>7.</u> For other than dedicated HVAC systems, return air shall not be taken from indoor swimming pool enclosures and associated deck areas except where the air in such spaces is dehumidified,</p> <p>6 <u>8.</u> Taking return air from an unconditioned <i>crawl space</i> shall not be accomplished through a direct connection to the return side of a forced-air furnace. Transfer openings in the <i>crawl space</i> enclosure shall not be prohibited.</p> <p>7 <u>9.</u> Return air from one <i>dwelling unit</i> shall not be discharged into another <i>dwelling unit</i>.</p>					
RM22-21	<p>Add new text as follows: R1005.9 M1805.4 Factory built chimney offsets. <u>Where a fireplace manufacturer's instructions do not address factory built chimney assembly, no part of the chimney shall be at an angle of more than 30 degrees (0.52 rad.) from vertical at any point in the assembly and the chimney assembly shall not include more than 4 elbows.</u></p>		X			Increased safety.
RM26-21	<p>Revise as follows: M1505.4.4 Local exhaust rates. <i>Local exhaust</i> systems shall be designed to have the capacity to exhaust the minimum airflow rate determined in accordance with Table M1505.4.4 <u>at one or more speed settings.</u> <u>The listed exhaust airflow rate for bathrooms-toilet rooms a bathroom or toilet room fan shall equal or exceed the exhaust airflow rate in Table M1505.4.4 at a minimum static pressure of 0.25 inch wc at one or more speed settings in accordance with Section M1505.3.</u></p> <p>TABLE M1505.4.4 MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS Portions of table not shown remain unchanged.</p> <p>a. The listed exhaust rate for bathrooms-toilet rooms shall equal or exceed the exhaust rate at a minimum static pressure of 0.25 inch water column in accordance with Section M1505.3.</p>		X			Editorial.
RM27-21	<p>Revise as follows: M2103.3 Piping joints. Copper and copper-alloy systems shall be soldered, brazed, or press connected. Soldering shall be in accordance with ASTM B828. Fluxes for soldering shall be in</p>		X			Additional design option.

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Sub Code:						
	<p>accordance with ASTM B813. Brazing fluxes shall be in accordance with AWS A5.31.</p> <p>Press-connect joints shall be in accordance with ASME B16.51 or ASTM F3226. Piping joints that are embedded shall be installed in accordance with the following requirements:</p> <ol style="list-style-type: none"> 1. Steel pipe joints shall be welded. 2. Copper tubing shall be joined by brazing complying with Section P3003.6.1. 3. Polybutylene pipe and tubing joints shall be installed with socket-type heat-fused polybutylene fittings. 4. CPVC tubing shall be joined using solvent cement joints. 5. Polypropylene pipe and tubing joints shall be installed with socket-type heat-fused polypropylene fittings. 6. Cross-linked polyethylene (PEX) tubing shall be joined using cold expansion, insert or compression fittings. 7. Raised temperature polyethylene (PE-RT) tubing shall be joined using insert or compression fittings. 					
RP1-21	<p>Delete and substitute as follows:</p> <p>P2503.5.2 Finished plumbing. After the plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proved gastight or watertight as follows:</p> <ol style="list-style-type: none"> 1. Watertightness. Each fixture shall be filled and then drained. Traps and fixture connections shall be proven watertight by visual inspection. 2. Gastightness. Where required by the local administrative authority, a final test for gastightness of the DWV system shall be made by the smoke or peppermint test as follows: <ol style="list-style-type: none"> 2.1. Smoke test. Introduce a pungent, thick smoke into the system. When the smoke appears at vent terminals, such terminals shall be sealed and a pressure equivalent to a 1-inch water column (249 Pa) shall be applied and maintained for a test period of not less than 15 minutes. 2.2. Peppermint test. Introduce 2 ounces (59 mL) of oil of peppermint into the system. Add 10 quarts (9464 mL) of hot water and seal the vent terminals. The odor of peppermint shall not be detected at any trap or other point in the system. <p><u>P2503.5.2 Drainage and vent final test.</u> The final test of the drainage and vent system shall be visual to determine</p>	X			Removes requirement for smoke test of piping during final testing.	Reduces redundancy.

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		Decrease	None	Increase		
Sub Code:						
	<u>compliance with the provisions of this code. Each fixture shall be filled and then drained. Traps and fixture connections shall be proven watertight.</u>					
RP3-21	Revise as follows: P2704.1 Slip joints. Slip-joint connections shall be installed only for tubular waste piping and only between the <u>waste</u> trap outlet of a fixture and the connection to the drainage piping. Slip-joint connections shall be made with an <i>approved</i> elastomeric sealing gasket. Slip-joint connections shall be accessible. Such access shall provide an opening that is not less than 12 inches (305 mm) in its smallest dimension.		X			Clarification.
RP4-21	Revise as follows: P2709.3 Installation. Lining materials shall be sloped ^{1/4} unit vertical in 12 units horizontal (2-percent slope) to weep holes in the subdrain by means of a smooth, solidly formed subbase, shall be properly recessed and fastened to <i>approved</i> backing so as not to occupy the space required for the wall covering, and shall not be nailed or perforated at any point less than 1 inch (25.4 mm) above the finished threshold. <u>The assembly shall be tested in accordance with Section P2503.6</u>		X			Editorial.
RP5-21	Revise as follows: P2717.2 Sink and dishwasher. Dishwasher waste connection. <u>The combined discharge from a dishwasher and a one- or two-compartment sink, with or without a food waste disposer, shall be served by a trap of not less than 1^{1/2} inches (38 mm) in outside diameter. The dishwasher discharge pipe or tubing shall rise to the underside of the counter and be fastened or otherwise held in that position before connecting to the head of the food waste disposer or to a wye fitting in the sink tailpiece. The waste connection of a dishwasher shall connect directly to a wye branch fitting on the tailpiece of the kitchen sink, directly to the dishwasher connection of a food waste disposer, or through an air break to a standpipe. The waste line of the dishwasher shall rise and be securely fastened to the underside of the sink rim or countertop and to the top of the standpipe.</u>		X			Editorial.
RP6-21	Revise as follows: P2801.1 Required. Hot water shall be supplied to plumbing fixtures and plumbing <i>appliances</i> intended for bathing, washing or culinary purposes.		X			Editorial.
RP7-21	Add new text as follows:		X			Clarification.

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Sub Code:						
	<u>P2801.6.3 Appliance, equipment and insulation in pans.</u> <u>Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill, such portions of the appliance, equipment and insulation shall be installed above the flood level rim of the pan. Supports located inside the pan to support the appliance or equipment shall be water resistant and approved.</u>					
RP8-21	Add new text as follows: <u>P2903.6 Existing piping used for grounding.</u> <u>Existing metallic water service piping used for electrical grounding shall not be replaced with non-metallic pipe or tubing until other approved means of grounding is provided.</u>		X			Clarification.
RP11-21	Revise as follows: <u>P3101.5 Flood resistance.</u> In flood hazard areas as established by Table R301.2, vents shall be located at or above the elevation required in Section R322.1 <u>R322.2</u> (flood hazard areas including A Zones) or R322.2 <u>R322.3</u> (coastal high-hazard areas including V Zones and Coastal A Zones, where designated).		X			Editorial.
M66-21 Part II	Revise as follows: <u>M2002.4 Pressure relief valve.</u> Boilers shall be equipped with pressure relief valves with minimum rated capacities for the equipment served. Pressure relief valves shall be set at the maximum rating of the boiler. Discharge shall be piped to drains by gravity to within 18 inches (457 mm) of the floor or to an open receptor. <u>M2002.4.1 Requirements for discharge pipe.</u> <u>The discharge piping serving a pressure relief valve, temperature relief valve or combination valve shall:</u> <ol style="list-style-type: none"> 1. <u>Not be directly connected to the drainage system.</u> 2. <u>Discharge through an air gap break located in the same room as the boiler.</u> 3. <u>Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.</u> 4. <u>Serve a single relief device and shall not connect to piping serving any other relief device or equipment.</u> 5. <u>Discharge to the floor, to the pan serving the water heater boiler or storage tank, to a waste receptor or to the outdoors.</u> 6. <u>Discharge in a manner that does not cause personal injury or structural damage.</u> 		X			Clarification.

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Sub Code:																										
	<p>7. <u>Discharge to a termination point that is readily observable by the building occupants.</u></p> <p>8. <u>Not be trapped.</u></p> <p>9. <u>Be installed to flow by gravity.</u></p> <p>10. <u>Terminate not more than 6 inches (152 mm) and not less than two times the discharge pipe diameter above the floor or waste receptor flood level rim.</u></p> <p>11. <u>Not have a threaded connection at the end of the piping.</u></p> <p>12. <u>Not have valves or tee fittings.</u></p> <p>13. <u>Be constructed of those materials indicated in Section P2906.5 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.</u></p> <p>14. <u>Be one nominal size larger than the size of the relief valve outlet, where the relief valve discharge piping is installed with insert fittings. The outlet end of such tubing shall be fastened in place.</u></p> <p>15. <u>The end of the discharge pipe shall be cut at a 45-degree angle.</u></p>																									
M99-21 Part II	<p>Revise as follows: TABLE P2906.6 PIPE FITTINGS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Fittings for cross-linked polyethylene (PEX) plastic tubing</td> <td>ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5</td> </tr> <tr> <td>Fittings for polyethylene of raised temperature (PE-RT) plastic tubing</td> <td>ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.18</td> </tr> </tbody> </table> <p>TABLE M2101.1 HYDRONIC PIPING AND FITTING MATERIALS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>USE CODE^a</th> <th>STANDARD^b</th> <th>JOINTS</th> <th>NOTES</th> </tr> </thead> <tbody> <tr> <td>PEX fittings</td> <td>—</td> <td>ASTM F877, ASTM F1807, ASTM F1960, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F3253, ASTM F3347</td> <td>Copper crimp/insert fittings, cold expansion fittings, stainless steel clamp, insert fittings</td> <td>Install in accordance with manufacturer's instructions</td> </tr> <tr> <td>Raised temperature polyethylene (PE-RT) fittings</td> <td>1, 2, 3</td> <td>ASTM D3261, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, ASTM F3347; CSA B137.18</td> <td>Copper crimp/insert fitting, stainless steel clamp, insert fittings</td> <td>—</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5	Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.18	MATERIAL	USE CODE ^a	STANDARD ^b	JOINTS	NOTES	PEX fittings	—	ASTM F877, ASTM F1807, ASTM F1960, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F3253, ASTM F3347	Copper crimp/insert fittings, cold expansion fittings, stainless steel clamp, insert fittings	Install in accordance with manufacturer's instructions	Raised temperature polyethylene (PE-RT) fittings	1, 2, 3	ASTM D3261, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, ASTM F3347; CSA B137.18	Copper crimp/insert fitting, stainless steel clamp, insert fittings	—		X		<p>Adds a standard for PEX and PERT fittings.</p>
MATERIAL	STANDARD																									
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5																									
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.18																									
MATERIAL	USE CODE ^a	STANDARD ^b	JOINTS	NOTES																						
PEX fittings	—	ASTM F877, ASTM F1807, ASTM F1960, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F3253, ASTM F3347	Copper crimp/insert fittings, cold expansion fittings, stainless steel clamp, insert fittings	Install in accordance with manufacturer's instructions																						
Raised temperature polyethylene (PE-RT) fittings	1, 2, 3	ASTM D3261, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, ASTM F3347; CSA B137.18	Copper crimp/insert fitting, stainless steel clamp, insert fittings	—																						
M100-21 Part II	<p>Revise as follows: TABLE M2101.1 HYDRONIC PIPING AND FITTING MATERIALS Portions of table not shown remain unchanged.</p>		X		<p>Adds a standard for</p>																					

Table 4. 2024 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2024 IRC MECHANICAL CHANGES SUMMARY					IRC MECHANICAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
						Decrease	None	Increase		
Sub Code:										
										PEX and PERT fittings.

MATERIAL	USE CODE ^a	STANDARD ^b	JOINTS	NOTES
PEX fittings	—	ASTM F877, ASTM F1807, ASTM F1960, ASTM F2068, ASTM F2158, ASTM F2735, ASTM F3253, ASTM F3348	Copper crimp/insert fittings, cold insertion fittings, stainless steel clamp, insert fittings	Install in accordance with manufacturer's instructions
Raised temperature polyethylene (PE-RT) fittings	1, 2, 3	ASTM D3261, ASTM F1807, ASTM F2098, ASTM F2158, ASTM F2735, ASTM F2769, ASTM F3348, CSA B137.18	Copper crimp/insert fitting, stainless steel clamp, insert fittings	—

APPENDIX E

Table 5. 2024 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2024 IRC PLUMBING CHANGES SUMMARY	IRC PLUMBING COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE										
		Decrease	None	Increase												
Sub Code:																
P54-21 Part II	Add new text as follows: P2801.9 Lead Content. Water heaters shall comply with NSF 372 and shall have a weighted average lead content of 0.25% or less.		X			Editorial.										
P62-21 Part II	Revise as follows: TABLE P2906.5 WATER DISTRIBUTION PIPE Portions of table not shown remain unchanged. <table border="1" data-bbox="235 745 917 882"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Stainless steel (Type 304/304L) pipe</td> <td>ASTM A269; ASTM A312; ASTM A554; ASTM A778</td> </tr> <tr> <td>Stainless steel (Type 316/316L) pipe</td> <td>ASTM A269; ASTM A312; ASTM A554; ASTM A778</td> </tr> <tr> <td>Stainless steel (Type 304/304L) tubing</td> <td>ASTM A269; ASTM A312; ASTM A554; ASTM A778</td> </tr> <tr> <td>Stainless steel (Type 316/316L) tubing</td> <td>ASTM A269; ASTM A312; ASTM A554; ASTM A778</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778	Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778	Stainless steel (Type 304/304L) tubing	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778	Stainless steel (Type 316/316L) tubing	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778		X			Adds design option.
MATERIAL	STANDARD															
Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778															
Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778															
Stainless steel (Type 304/304L) tubing	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778															
Stainless steel (Type 316/316L) tubing	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778															
P63-21 Part II	Revise as follows: TABLE P2906.6 PIPE FITTINGS Portions of table not shown remain unchanged. <table border="1" data-bbox="235 997 966 1092"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Stainless steel (Type 304/304L) pipe</td> <td>ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F3226</td> </tr> <tr> <td>Stainless steel (Type 316/316L) pipe</td> <td>ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F3226</td> </tr> <tr> <td>Steel</td> <td>ASME B16.9; ASME B16.11; ASME B16.28; ASTM F3226</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778; ASTM F3226	Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778; ASTM F3226	Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F3226		X			Adds additional options.		
MATERIAL	STANDARD															
Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778; ASTM F3226															
Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ASTM A554 ; ASTM A778; ASTM F3226															
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F3226															
P64-21 Part II	Revise as follows: TABLE P2906.6 PIPE FITTINGS Portions of table not shown remain unchanged. <table border="1" data-bbox="235 1218 966 1396"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Fittings for cross-linked polyethylene (PEX) plastic tubing</td> <td>ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5</td> </tr> <tr> <td>Fittings for polyethylene of raised temperature (PE-RT) plastic tubing</td> <td>ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.18</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5	Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347 ; CSA B137.18		X			Adds a standard for PEX and PERT fittings.				
MATERIAL	STANDARD															
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5															
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347 ; CSA B137.18															
P65-21 Part II	Revise as follows: TABLE P2906.6 PIPE FITTINGS Portions of table not shown remain unchanged. <table border="1" data-bbox="235 1512 966 1680"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Fittings for cross-linked polyethylene (PEX) plastic tubing</td> <td>ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348; CSA B137.5</td> </tr> <tr> <td>Fittings for polyethylene of raised temperature (PE-RT) plastic tubing</td> <td>ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3348; CSA B137.18</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348 ; CSA B137.5	Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3348 ; CSA B137.18		X			Adds a standard for PEX and PERT fittings.				
MATERIAL	STANDARD															
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348 ; CSA B137.5															
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3348 ; CSA B137.18															
P68-21 Part II	Revise as follows: TABLE P2903.9.4 VALVES Portions of table not shown remain unchanged.		X			Additional valve options.										

Table 5. 2024 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2024 IRC PLUMBING CHANGES SUMMARY	IRC PLUMBING COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE								
		Decrease	None	Increase										
Sub Code:														
	<table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Copper or copper alloy</td> <td>ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASME B16.34, CSA B125.3, IAPMO Z1157, MSS SP-67, MSS SP-80, MSS SP-110, MSS SP-139</td> </tr> <tr> <td>Cross-linked polyethylene (PEX) plastic</td> <td>ASME A112.4.14, ASME A112.18.1/CSA B125.1, CSA B125.3, IAPMO Z1157, NSF 359</td> </tr> <tr> <td>Stainless Steel</td> <td>IAPMO Z1157, ASME A112.4.14</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Copper or copper alloy	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASME B16.34, CSA B125.3, IAPMO Z1157, MSS SP-67, MSS SP-80, MSS SP-110, MSS SP-139	Cross-linked polyethylene (PEX) plastic	ASME A112.4.14, ASME A112.18.1/CSA B125.1, CSA B125.3, IAPMO Z1157, NSF 359	Stainless Steel	IAPMO Z1157, ASME A112.4.14					
MATERIAL	STANDARD													
Copper or copper alloy	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASME B16.34, CSA B125.3, IAPMO Z1157, MSS SP-67, MSS SP-80, MSS SP-110, MSS SP-139													
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14, ASME A112.18.1/CSA B125.1, CSA B125.3, IAPMO Z1157, NSF 359													
Stainless Steel	IAPMO Z1157, ASME A112.4.14													
P74-21 Part II	<p>Revise as follows:</p> <p>P2906.9.1.2 CPVC plastic pipe. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer’s installation instructions. <u>Solvent cement joints shall be permitted above or below ground.</u> Where such instructions require a primer to be used, an <i>approved</i> primer shall be applied, and a solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. <u>The joint shall be made while the cement is wet, and in accordance with ASTM D2855.</u> Where such instructions allow for a one-step solvent cement, yellow or red in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet, and in accordance with ASTM D2846 or ASTM F493 <u>ASTM F3328</u>. Solvent cement joints shall be permitted above or below ground.</p> <p>P2906.9.1.3 CPVC/AL/CPVC pipe. Joint surfaces shall be clean and free from moisture, and an <i>approved</i> primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and in accordance with ASTM D2846 or ASTM F493 <u>ASTM D2855</u>. Solvent-cemented joints shall be installed above or below ground.</p> <p>Exception: A primer shall not be required where all of the following conditions apply:</p> <ol style="list-style-type: none"> 1. The solvent cement used is third-party certified as conforming to ASTM F493. 2. The solvent cement used is yellow in color. 3. The solvent cement is used only for joining 1/2-inch (12.7 mm) through 1-inch (25 mm) diameter CPVC/AL/CPVC pipe and CPVC fittings. 		X		<p>Adds option to use one step cement for PVC joints.</p>									

Table 5. 2024 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2024 IRC PLUMBING CHANGES SUMMARY	IRC PLUMBING COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>4. The CPVC fittings are manufactured in accordance with ASTM D2846.</p> <p>5. <u>The joint is made in accordance with ASTM F3328.</u></p>					
P75-21 Part II	<p>Revise as follows: P2906.9.1.2 CPVC plastic pipe. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer’s installation instructions. Where such instructions require a primer to be used, an <i>approved</i> primer shall be applied, and a solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. Where such instructions allow for a one-step solvent cement, yellow, <u>green</u>, or red in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet, and in accordance with ASTM D2846 or ASTM F493. Solvent cement joints shall be permitted above or below ground.</p>		X			Adds option to use one step cement for PVC joints.
P76-21 Part II	<p>Revise as follows: P2906.9.1.3 CPVC/AL/CPVC pipe. Joint surfaces shall be clean and free from moisture, and an <i>approved</i> primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and in accordance with ASTM D2846 or ASTM F493 <u>ASTM D2855</u>. Solvent-cemented joints shall be installed above or below ground.</p> <p>Exception: A primer shall not be required where all of the following conditions apply:</p> <ol style="list-style-type: none"> The solvent cement used is third-party certified as conforming to ASTM F493. The solvent cement used is yellow in color. The solvent cement is used only for joining 1/2-inch (12.7 mm) through 1-inch (25 mm) diameter CPVC/AL/CPVC pipe and CPVC fittings. The CPVC fittings are manufactured in accordance with ASTM D2846. <u>The joint is made in accordance with ASTM F3328</u> 		X			Added more standards for assembling solvent weld joints
P117-21 Part II	<p>Revise as follows: P3003.9.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer, or other <i>approved</i> primer, that conforms to ASTM F656 shall be applied. Solvent cement</p>		X			Added more standards for assembling

Table 5. 2024 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2024 IRC PLUMBING CHANGES SUMMARY	IRC PLUMBING COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE											
		Decrease	None	Increase													
Sub Code:																	
	<p>not purple in color and conforming to ASTM D2564, CSA B137.3 or CSA B181.2 shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and shall be in accordance with ASTM D2855.</p> <p>Solvent-cement joints shall be installed above or below ground.</p> <p>Exception: A primer shall not be required where all of the following conditions apply:</p> <ol style="list-style-type: none"> 1. The solvent cement used is third-party certified as conforming to ASTM D2564. 2. The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in nonpressure applications in sizes up to and including 4 inches (102 mm) in diameter 3. <u>The joint is made in accordance with ASTM F3328.</u> 					solvent weld joints											
P120-21 Part II	<p>Revise as follows:</p> <p>TABLE P3002.1(1) ABOVE-GROUND DRAINAGE AND VENT PIPE</p> <p>Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyolefin pipe</td> <td>ASTM F3371; CSA B181.3</td> </tr> </tbody> </table> <p>TABLE P3002.1(2) UNDERGROUND BUILDING DRAINAGE AND VENT PIPE</p> <p>Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>PIPE</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyolefin pipe</td> <td>ASTM F714; ASTM F1412; ASTM F3371; CSA B181.3</td> </tr> </tbody> </table> <p>TABLE P3002.2 BUILDING SEWER PIPE</p> <p>Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyolefin pipe</td> <td>ASTM F1412; ASTM F3371; CSA B181.3</td> </tr> </tbody> </table> <p>P3003.11.1 Heat-fusion joints. Heat-fusion joints for polyolefin pipe and tubing joints shall be installed with socket-type heat-fused polyolefin fittings or electrofusion polyolefin fittings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM F1412, <u>ASTM F3371</u>, or CSA B181.3.</p>	MATERIAL	STANDARD	Polyolefin pipe	ASTM F3371; CSA B181.3	PIPE	STANDARD	Polyolefin pipe	ASTM F714; ASTM F1412; ASTM F3371; CSA B181.3	MATERIAL	STANDARD	Polyolefin pipe	ASTM F1412; ASTM F3371; CSA B181.3		X		Adds option for piping.
MATERIAL	STANDARD																
Polyolefin pipe	ASTM F3371; CSA B181.3																
PIPE	STANDARD																
Polyolefin pipe	ASTM F714; ASTM F1412; ASTM F3371; CSA B181.3																
MATERIAL	STANDARD																
Polyolefin pipe	ASTM F1412; ASTM F3371; CSA B181.3																

Table 5. 2024 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2024 IRC PLUMBING CHANGES SUMMARY	IRC PLUMBING COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE								
		Decrease	None	Increase										
Sub Code:														
P140-21 Part II	<p>Revise as follows:</p> <p>TABLE P3009.11 DISTRIBUTION PIPE Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F405</td> </tr> </tbody> </table> <p>TABLE P3302.1 SUBSOIL <u>DRAIN PIPE</u> Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F405; CSA B182.1; CSA B182.6; CSA B182.8</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F405	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F405; CSA B182.1; CSA B182.6; CSA B182.8		X			Editorial.
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F405													
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F405; CSA B182.1; CSA B182.6; CSA B182.8													
P143-21 Part II	<p>Revise as follows:</p> <p>TABLE P3302.1 SUBSOIL <u>DRAIN PIPE</u> Portions of <u>table</u> not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F405; <u>ASTM F667/F667M</u>; CSA B182.1; CSA B182.6; CSA B182.8</td> </tr> </tbody> </table> <p>TABLE P3009.11 DISTRIBUTION PIPE Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM F405; <u>ASTM F667/F667M</u></td> </tr> </tbody> </table>	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F405; <u>ASTM F667/F667M</u> ; CSA B182.1; CSA B182.6; CSA B182.8	MATERIAL	STANDARD	Polyethylene (PE) plastic pipe	ASTM F405; <u>ASTM F667/F667M</u>		X			Clarification.
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F405; <u>ASTM F667/F667M</u> ; CSA B182.1; CSA B182.6; CSA B182.8													
MATERIAL	STANDARD													
Polyethylene (PE) plastic pipe	ASTM F405; <u>ASTM F667/F667M</u>													
P147-21 Part II	<p>Add new text as follows:</p> <p>APPENDIX AX NON-SEWERED SANITATION SYSTEMS SECTION AX101 GENERAL AX101.1 Applicability. The provisions of this chapter shall apply to the installation of non-sewered sanitation systems. AX101.2 System requirements. Non-sewered sanitation systems shall comply with ANSI/CAN/IAPMO/ISO 30500. SECTION AX102 DEFINITIONS AX102.1 General. For purposes of this chapter, the following definitions shall apply. Conditioned Space. An area, room, or space normally occupied and being heated or cooled for human habitation by any equipment.</p>		X			Editorial.								

Table 5. 2024 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2024 IRC PLUMBING CHANGES SUMMARY	IRC PLUMBING COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>Non-Sewered Sanitation System.</u> A prefabricated integrated sewage treatment unit that is not connected to a public sewer or private sewage disposal system.</p> <p><u>SECTION AX103 INSTALLATION</u></p> <p><u>AX103.1 General.</u> The installation of non-sewered sanitation systems shall be in accordance with the manufacturer's installation instructions and with Section AX103.2 through AX103.7.</p> <p><u>AX103.2 Operating conditions.</u> A non-sewered sanitation system in either a conditioned or unconditioned space shall be installed where the ambient temperature, ambient humidity, and altitude (atmospheric pressure) are in accordance with the manufacturer's installation instructions or product listing.</p> <p><u>AX103.3 Clearances for servicing and maintenance.</u> A non-sewered sanitation system shall be located to permit access and sufficient clearance for service and maintenance. Unless otherwise specified by the manufacturer's installation instructions, not less than 30 inches in depth, width, and height of working space shall be provided at any access panel.</p> <p><u>AX103.4 Backflow prevention.</u> A domestic water supply connection to a non-sewered sanitation system shall be protected in accordance with Section P2902 of this code.</p> <p><u>AX103.5 Effluent storage.</u> Any container or vessel for the storage of effluent discharged from a non-sewered sanitation system and not integral to such system shall be installed in accordance with Section P2910.9 of this code.</p> <p><u>AX103.6 Systems employing combustion.</u> A non-sewered sanitation system employing combustion shall comply with the mechanical code.</p> <p><u>Exception:</u> A non-sewered sanitation system listed for unvented use.</p> <p><u>AX103.7 Connection to plumbing system not required.</u> Unless the Authority Having Jurisdiction determines otherwise, a non-sewered sanitation system is not required to be connected to the sanitary drainage system of the building or premises.</p> <p><u>SECTION AX104 MANUAL REQUIRED</u></p> <p><u>AX104.1 Operation and maintenance manual.</u> Non-sewered sanitation systems shall have an operation and maintenance manual provided by the manufacturer.</p>					

Table 5. 2024 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2024 IRC PLUMBING CHANGES SUMMARY	IRC PLUMBING COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE					
		Decrease	None	Increase							
Sub Code:											
	<p><u>AX105 System output.</u> The use or disposal of all substances exiting the non-sewered sanitation system shall be determined by the Authority Having Jurisdiction.</p> <p><u>AX106.1 General.</u> See Table AX106.1 for standards that are referenced in various sections of this appendix. Standards are listed by the standard identification with the effective date, the standard title, and the section or sections of this appendix that reference the standard.</p> <p><u>TABLE AX106.1 REFERENCE STANDARDS</u></p> <table border="1"> <thead> <tr> <th>STANDARD ACRONYM</th> <th>STANDARD NAME</th> <th>SECTIONS HEREIN REFERENCED</th> </tr> </thead> <tbody> <tr> <td>ANSI/CAN/IAPMO/ISO 30500-2019</td> <td>Non-sewered sanitation systems - Prefabricated integrated treatment units - General Safety and performance requirements for design and testing</td> <td>AX101.2</td> </tr> </tbody> </table>	STANDARD ACRONYM	STANDARD NAME	SECTIONS HEREIN REFERENCED	ANSI/CAN/IAPMO/ISO 30500-2019	Non-sewered sanitation systems - Prefabricated integrated treatment units - General Safety and performance requirements for design and testing	AX101.2				
STANDARD ACRONYM	STANDARD NAME	SECTIONS HEREIN REFERENCED									
ANSI/CAN/IAPMO/ISO 30500-2019	Non-sewered sanitation systems - Prefabricated integrated treatment units - General Safety and performance requirements for design and testing	AX101.2									

APPENDIX F

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
E15-21	<p>Revise as follows:</p> <p>1006.2.2.2 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two <i>exits</i> or exit access doorways. Where two <i>exit access doorways</i> are required, one such doorway is permitted to be served by a fixed ladder or an <i>alternating tread device</i>. <i>Exit access doorways</i> shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room.</p> <p><u>Exit access travel distance shall be determined as specified in Section 1017.1, but all portions of a refrigeration machinery room shall be within 150 feet (45 720 mm) of an exit or exit access doorway where such rooms are not protected by an approved automatic sprinkler system. Egress is allowed through adjoining refrigeration machinery rooms or adjoining refrigerated rooms or spaces.</u></p> <p>All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in exit access travel distance is permitted in accordance with Section 1017.1.</p> <p><i>Exit and exit access doorways</i> shall swing in the direction of egress travel and shall be equipped with <i>panic hardware</i>, regardless of the <i>occupant load</i> served. <i>Exit and exit access doorways</i> shall be tight fitting and <i>self-closing</i>.</p> <p>1006.2.2.3 Refrigerated rooms or spaces.</p> <p>Rooms or spaces having a floor area larger than 1,000 square feet (93 m²), containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two <i>exits</i> or <i>exit access doorways</i>.</p> <p><i>Exit access</i> travel distance shall be determined as specified in Section 1017.1. 1017.1 but <u>all</u> portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an <i>exit</i> or <i>exit access doorway</i> <u>leading to a nonrefrigerated area</u> where such rooms are not protected by an <i>approved automatic sprinkler system</i>. Egress is allowed through adjoining refrigerated rooms or spaces.</p> <p>Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the <i>International Mechanical Code</i>.</p> <p><u>Egress is allowed through adjoining refrigerated rooms or spaces.</u></p>	X				Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
E17-21	<p>Revise as follows: 1006.3 Egress from stories or occupied roofs. The means of egress system serving any story or occupied roof shall be provided with the <u>All spaces located on a story or occupied roof shall have access to the required</u> number of separate and distinct <i>exits</i> or access to <i>exits</i> based on the aggregate <i>occupant load</i> served in accordance with this section.</p>		X			Clarification.
E18-21	<p>Revise as follows: 1006.3.2 Path of egress travel. The path of egress travel to an <i>exit</i> shall not pass through more than one adjacent <i>story</i>. Exception: The path of egress travel to an <i>exit</i> shall be permitted to pass through more than one adjacent <i>story</i> in any of the following:</p> <ol style="list-style-type: none"> 1. In Group R-1, R-2 or R-3 occupancies, <i>exit access stairways</i> and <i>ramps</i> connecting four stories or less serving and contained within an individual dwelling unit, sleeping unit or live/work unit. 2. <i>Exit access stairways</i> serving and contained within a Group R-3 congregate residence or a Group R-4 facility. 3. <i>Exit access stairways</i> and <i>ramps</i> within an <i>atrium</i> complying with Section 404. 4. <i>Exit access stairways</i> and <i>ramps</i> in <i>open parking garages</i> that serve only the parking garage. 5. <i>Exit access stairways</i> and <i>ramps</i> serving <u>smoke-protected assembly seating and open-air assembly seating</u> complying with the exit access travel distance requirements of Section 1030.7. 6. <i>Exit access stairways</i> and <i>ramps</i> between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, <i>places of religious worship</i>, auditoriums and sports facilities. 7. Exterior <i>exit access stairways</i> and <i>ramps</i> between occupied roofs. 		X			Clarification.
E21-21	<p>Revise as follows: 1006.3.3 Egress based on occupant load. TABLE 1006.3.3 MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY OR OCCUPIED ROOF</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

OCCUPANT LOAD PER STORY OR OCCUPIED ROOF	MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS FROM PER STORY OR OCCUPIED ROOF
1-500	2
501-1,000	3
More than 1,000	4

TABLE 1006.3.4(1) STORIES AND OCCUPIED ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY OR OCCUPIED ROOF	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, first, second or third story above grade plane and occupied roofs over the first or second story above grade plane	R-2 ^{a, b, c}	4 dwelling units	125 feet
Fourth story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm. NP = Not Permitted. NA = Not Applicable.

- a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.
- b. This table is used for Group R-2 occupancies consisting of dwelling units. For Group R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).
- c. This table is for occupied roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupied roofs that are not accessed through and serving individual units, use Table 1006.3.4(2).

TABLE 1006.3.4(2) STORIES AND OCCUPIED ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY AND OCCUPIED ROOF	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY AND OCCUPIED ROOF	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane and occupied roofs over the first story above grade plane	A, B ^d , E, F ^d , M, U	48	75
	H-2, H-3	3	25
	H-4, H-5, I, R-1, R-2 ^{b, c}	10	75
	S ^{b, d}	25	75
Second story above grade plane	B, F, M, S ^d	25	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm. NP = Not Permitted. NA = Not Applicable.

- a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.
- b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or on the roof of such buildings shall have a maximum exit access travel distance of 100 feet.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>c. This table is used for Group R-2 occupancies consisting of <i>sleeping units</i>. For Group R-2 occupancies consisting of <i>dwelling units</i>, use Table 1006.3.4(1).</p> <p>d. The length of <i>exit access</i> travel distance in a Group S-2 <i>open parking garage</i> shall be not more than 100 feet.</p>					
E24-21	<p>Revise as follows:</p> <p>1008.1 Means of egress illumination. Illumination shall be provided in the <i>means of egress</i> in accordance with Section 1008.2. Under emergency power <u>In the event of power supply failure</u>, <i>means of egress</i> illumination shall comply with Section 1008.3.</p> <p>1008.2 Illumination required. The <i>means of egress</i> serving a room or space shall be illuminated at all times that the room or space is occupied.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Occupancies in Group U. <i>Aisle accessways</i> in Group A. <i>Dwelling units</i> and <i>sleeping units</i> in Groups R-1, R-2 and R-3. <i>Sleeping units</i> of Group I occupancies. <p>1008.2.1 Illumination level under normal power. The <i>means of egress</i> illumination level shall be not less than 1 footcandle (11 lux) at the walking surface. Along <i>exit access stairways</i>, exit stairways and at their required landings, the illumination level shall not be less than 10 footcandles (108 lux) at the walking surface when the <i>stairway</i> is in use.</p> <p>Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances by one of the following methods provided that the required illumination is automatically restored upon activation of a premises' <i>fire alarm system</i>:</p> <ol style="list-style-type: none"> Externally illuminated walking surfaces shall be permitted to be illuminated to not less than 0.2 footcandle (2.15 lux). Steps, landings and the sides of <i>ramps</i> shall be permitted to be marked with <i>self-luminous</i> materials in accordance with Sections 1025.2.1, 1025.2.2 and 1025.2.4 by systems <i>listed</i> in accordance with UL 1994. 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>1008.2.2 Group I-2. In Group I-2 occupancies where two or more exits are required, on the exterior landings required by Section 1010.1.5, means of egress illumination levels for the exit discharge shall be provided such that failure of a single lamp in a luminaire shall not reduce the illumination level on that landing to less than 1 footcandle (11 lux).</p> <p>1008.2.3 Exit discharge. Illumination shall be provided along the path of travel for the exit discharge from each exit to the <i>public way</i>.</p> <p>Exception: Illumination shall not be required where the path of the exit discharge meets both of the following requirements:</p> <ol style="list-style-type: none"> 1. The path of exit discharge is illuminated from the exit to a safe dispersal area complying with Section 1028.5. 2. A dispersal area shall be illuminated to a level not less than 1 footcandle (11 lux) at the walking surface. <p>1008.3 1008.2.4 Emergency power Power for illumination. The power supply for <i>means of egress</i> illumination shall normally be provided by the premises' electrical supply.</p> <p>1008.3 Illumination required by an emergency electrical system. An emergency electrical system shall be provided to automatically illuminate the following areas in the event of a power supply failure:</p> <ol style="list-style-type: none"> 1. <u>In rooms or spaces that require two or more exits or access to exits:</u> <ol style="list-style-type: none"> 1.1. <u>Aisles.</u> 1.2. <u>Corridors.</u> 1.3. <u>Exit access stairways and ramps.</u> 2. <u>In buildings that require two or more exits or access to exits:</u> <ol style="list-style-type: none"> 2.1. <u>Interior exit access stairways and ramps.</u> 2.2. <u>Interior and exterior exit stairways and ramps.</u> 2.3. <u>Exit passageways</u> 2.4. <u>Vestibules and areas on the level of discharge used for exit discharge in accordance with Section 1028.2.</u> 2.5. <u>Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the exit discharge.</u> 3. <u>In other rooms and spaces:</u> <ol style="list-style-type: none"> 3.1. <u>Electrical equipment rooms.</u> 3.2. <u>Fire command centers.</u> 3.3. <u>Fire pump rooms.</u> 					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>3.4. <u>Generator rooms.</u></p> <p>3.5. <u>Public restrooms with an area greater than 300 square feet (27.87 m²).</u></p> <p>1008.3.1 1008.3 General illumination required by an emergency electrical system. In the event of power supply failure in rooms and spaces that require two or more exits or access to exits, an emergency electrical system shall automatically illuminate all of the following areas:</p> <ol style="list-style-type: none"> 1. Aisles. 2. Corridors. 3. Exit access stairways and ramps. <p>1008.3.2 1008.3.1 Buildings. In the event of power supply failure in buildings that require two or more exits or access to exits, an emergency electrical system shall automatically illuminate all of the following areas:</p> <ol style="list-style-type: none"> 1. Interior exit access stairways and ramps. 2. Interior and exterior exit stairways and ramps. 3. Exit passageways. 4. Vestibules and areas on the level of discharge used for exit discharge in accordance with Section 1028.2. 5. Exterior landings as required by Section 1010.1.5 for exit doorways that lead directly to the exit discharge. <p>1008.3.3 1008.3.2 Rooms and spaces. In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:</p> <ol style="list-style-type: none"> 1. Electrical equipment rooms. 2. Fire command centers. 3. Fire pump rooms. 4. Generator rooms. 5. Public restrooms with an area greater than 300 square feet (27.87 m²). <p>1008.3.4 1008.3.3 Duration. The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 2702.</p> <p>1008.3.5 1008.3.4 Illumination level under emergency power. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 footcandle (11 lux) and a minimum at any point of 0.1 footcandle (1 lux)</p>			-		

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	measured along the path of egress at floor level. Illumination levels shall be permitted to decline to 0.6 footcandle (6 lux) average and a minimum at any point of 0.06 footcandle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. In Group I-2 occupancies, failure of a single lamp in a luminaire shall not reduce the illumination level to less than 0.2 footcandle (2.2 lux).					
E25-21	<p>Revise as follows:</p> <p>1008.2 Illumination required. The <i>means of egress</i> serving a room or space shall be illuminated at all times that the room or space is occupied.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Occupancies in Group U. <u>Self-service storage units 400 ft² (37.16 m²) or less in area and accessed directly from the exterior of the building.</u> <i>Aisle accessways</i> in Group A. <i>Dwelling units</i> and <i>sleeping units</i> in Groups R-1, R-2 and R-3 <i>Sleeping units</i> of Group I occupancies. 	X			Minimal	Clarification.
E28-21	<p>Revise as follows:</p> <p>1009.2.1 Elevators required. In buildings where a required accessible floor or occupied roof is four or more stories above or below a <u>level of exit discharge</u> or where an accessible occupied roof is above a story that is three or more stories above the level of exit discharge, not less than one required <i>accessible means of egress</i> shall be <u>include</u> an elevator complying with Section 1009.4.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> In buildings equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required <u>as part of the accessible means of egress</u> on floors provided with a <i>horizontal exit</i> and located at or above the <i>levels of exit discharge</i>. In buildings equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a <i>ramp</i> conforming to the provisions of Section 1012. <u>In buildings equipped throughout with an automatic</u> 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<u>sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of an accessible means of egress for an occupied roof where the floors located at or above the level of exit discharge are provided with a horizontal exit.</u>					
E30-21	<p>Revise as follows: 1009.2.1 Elevators required. Exceptions: 2. In buildings equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required <u>as part of an accessible means of egress on floors or occupied roofs</u> provided with a <i>ramp</i> conforming to the provisions of Section 1012.</p>	X			Minimal decrease in cost if occupied roof is provided on a building with ramp access to the levels.	Clarification.
E34-21	<p>Add new text as follows: 1009.2.2 Doors. <u>Where doors are part of an accessible route to provide access to an exit, area of refuge or exterior area of assisted rescue the doors shall provide maneuvering clearances shall be provided at such doors as required by ICC A117.1 in the direction of egress.</u> Exception: <u>Maneuvering clearances are not required at doors to exit stairways for levels above and below the level of exit discharge where the exit enclosure does not include an area of refuge.</u></p>		X			Clarification.
E37-21 Part I	<p>Revise as follows: 1009.11 Instructions. In <i>areas of refuge</i>, and exterior areas for assisted rescue, and locations required to provide two-way communications systems complying with Section 1009.8 instructions on the use of the area under emergency conditions shall be posted. Signage shall comply with the ICC A117.1 requirements for visual characters. The instructions shall include all of the following: Persons able to use the <i>exit stairway</i> do so as soon as possible, unless they are assisting others. Information on planned availability of assistance in the use of <i>stairs</i> or supervised operation of elevators and how to summon such assistance. Directions for use of the two-way communication system where provided.</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>3002.3 Emergency signs. A An approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. <u>Where elevators are not a component of the accessible means of egress the</u> The sign shall read: IN CASE OF FIRE, ELEVATORS ARE OUT OF SERVICE. USE EXITSTAIRS. <u>Where the elevator is a component of the accessible means of egress a sign complying with Section 1009.11 shall be provided.</u></p> <p>Exception Exceptions: The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1009.4. The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with Section 3008.</p>					
E37-21 Part II	<p>Revise as follows:</p> <p>1103.3.2 Elevator emergency operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Buildings without occupied floors located more than 55 feet (16 764 mm) above or 25 feet (7620 mm) below the lowest level of fire department vehicle access where protected at the elevator shaft openings with additional fire doors in accordance with Section 716 of the International Building Code and where all of the following conditions are met: <ol style="list-style-type: none"> The doors shall be provided with vision panels of <i>approved</i> fire-protection-rated glazing so located as to furnish clear vision of the approach to the elevator. Such glazing shall not exceed 100 square inches (0.065 m²) in area. The doors shall be held open but be automatic-closing by activation of a fire alarm initiating device installed in accordance with the requirements of NFPA 72 as for Phase I Emergency Recall Operation, and shall be located at each floor served by the elevator; in the associated elevator 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>machine room, control space, or control room; and in the elevator hoist way, where sprinklers are located in those hoist ways.</p> <p>2.1. The doors, when closed, shall have signs visible from the approach area stating: "WHEN THESE DOORS ARE CLOSED OR IN <u>CASE OF FIRE EMERGENCY</u>, DO NOT USE ELEVATOR ELEVATORS ARE OUT OF SERVICE. USE EXIT STAIRWAYS."</p> <p>3. Buildings without occupied floors located more than 55 feet (16 764 mm) above or 25 feet (7620 mm) below the lowest level of fire department vehicle access where provided with <i>automatic sprinkler systems</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2.</p> <p>4. Freight elevators in buildings provided with both <i>automatic sprinkler systems</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2 and not less than one ASME 17.3-compliant elevator serving the same floors.</p> <p>Elimination of previously installed Phase I emergency recall or Phase II emergency in-car systems shall not be permitted.</p>					
E38-21	<p>Revise as follows:</p> <p>1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the <i>occupant load</i> thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the <u>frame stop</u>, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 41¹/₂ inches (1054 mm). The minimum clear opening height of doors shall be not less than 80 inches (2032 mm).</p> <p>Exceptions:</p> <p>1. In Group R-2 and R-3 <i>dwelling and sleeping units</i> that are not required to be an <i>Accessible unit, Type A unit or Type B unit</i>, the minimum width shall not apply to door openings that are not part of the required <i>means of egress</i>.</p>		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>2. In Group I-3, door openings to resident <i>sleeping units</i> that are not required to be an <i>Accessible unit</i> shall have a minimum clear opening width of 28 inches (711 mm).</p> <p>3. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum clear opening width.</p> <p>4. The maximum width of door leaves in revolving doors that comply with Section 1010.3.1 shall not be limited.</p> <p>5. The maximum width of door leaves in <i>power-operated doors</i> that comply with Section 1010.3.2 shall not be limited.</p> <p>6. Door openings within a <i>dwelling unit</i> or <i>sleeping unit</i> shall have a minimum clear opening height of 78 inches (1981 mm).</p> <p>7. In <i>dwelling and sleeping units</i> that are not required to be <i>Accessible</i>, <i>Type A</i> or <i>Type B units</i>, exterior door openings other than the required <i>exit</i> door shall have a minimum clear opening height of 76 inches (1930 mm).</p> <p>8. In Groups I-1, R-2, R-3 and R-4, in <i>dwelling and sleeping units</i> that are not required to be <i>Accessible</i>, <i>Type A</i> or <i>Type B units</i>, the minimum clear opening widths shall not apply to interior egress doors.</p> <p>9. Door openings required to be <i>accessible</i> within <i>Type B units</i> intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm).</p> <p>10. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m²) in area shall have a maximum width of 60 inches (1524 mm) nominal.</p> <p>11. Doors serving nonaccessible single-user shower or sauna compartments, toilet stalls or dressing, fitting or changing rooms shall have a minimum clear opening width of 20 inches (508 mm).</p> <p>1010.1.1.1 Projections into clear opening. There shall not be projections into the required clear opening width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).</p> <p>Exception: Door closers, overhead door stops, <u>frame stops</u>, power door operators, and electromagnetic door locks shall be</p>					

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	<p>permitted to <u>project into the door opening height not lower than</u> be 78 inches (1980 mm) minimum above the floor.</p> <p>A barrier shall be provided where the vertical clearance above a <i>circulation path</i> is less than 80 inches (2032 mm) high above the finished floor. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the finished floor.</p>					
E39-21	<p>Revise as follows:</p> <p>1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the <i>occupant load</i> thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width o 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 41¹/₂ inches (1054 mm). The minimum clear opening height of doors shall be not less than 80 inches (2032 mm).</p> <p>Exceptions:</p> <p>In Group R-2 and R-3 <i>dwelling and sleeping units</i> that are not required to be an <i>Accessible unit, Type A unit</i> or <i>Type B unit</i>, the minimum width shall not apply to door openings that are not part of the required <i>means of egress</i>.</p> <p>In Group I-3, door openings to resident <i>sleeping units</i> that are not required to be an <i>Accessible unit</i> shall have a minimum clear opening width of 28 inches (711 mm).</p> <p>Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum clear opening width.</p> <p>The maximum width of door leaves in revolving doors that comply with Section 1010.3.1 shall not be limited.</p> <p>The maximum width of door leaves in power-operated doors that comply with Section 1010.3.2 shall not be limited.</p> <p>4.6. Door openings within a <i>dwelling unit</i> or <i>sleeping unit</i> shall have a minimum clear opening height of 78 inches (1981 mm).</p> <p>5.7. In <i>dwelling and sleeping units</i> that are not required to be <i>Accessible, Type A</i> or <i>Type B units</i>, exterior door openings other</p>		X			Allows additional design options.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>than the required <i>exit</i> door shall have a minimum clear opening height of 76 inches (1930 mm).</p> <p>6.8. In Groups I-1, R-2, R-3 and R-4, in <i>dwelling and sleeping units</i> that are not required to be Accessible, Type A or Type B units, the minimum clear opening widths shall not apply to interior egress doors.</p> <p>7.9. Door openings required to be <i>accessible</i> within Type B units intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm).</p> <p>10. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m²) in area shall have a maximum width of 60 inches (1524 mm) nominal.</p> <p>8.11. Doors serving nonaccessible single-user shower or sauna compartments, toilet stalls or dressing, fitting or changing rooms shall have a minimum clear opening width of 20 inches (508 mm).</p> <p>1010.4 Gates. Gates serving the <i>means of egress</i> system shall comply with the requirements of this section. Gates used as a component in a <i>means of egress</i> shall conform to the applicable requirements for doors.</p> <p>Exception: Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.</p>				-	
E40-21	<p>Revise as follows:</p> <p>1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the <i>occupant load</i> thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 41½ inches (1054 mm). The minimum clear opening height of doors shall be not less than 80 inches (2032 mm).</p> <p>Exceptions: Doors serving nonaccessible single-user shower or sauna compartments, toilet stalls compartments or dressing, fitting or</p>		X			Clarification

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>changing rooms compartments that are not required to be accessible shall have a minimum clear opening width of 20 inches (508 mm).</p> <p>Door serving shower compartments in other than Accessible units or Type A units are not required to provide a minimum clear opening width. shall comply with Section 421.4.2 of the International Plumbing Code.</p>					
E43-21	<p>Add new definition as follows:</p> <p>AUTOMATIC FLUSH BOLT. <u>Door locking hardware, installed on the inactive leaf of a pair of doors, which has a bolt that is extended automatically into the door frame or floor when the active leaf is closed after the inactive leaf, and which holds the inactive leaf in a closed position. When the active leaf is opened, the automatic flush bolt retracts the bolt or rod allowing the inactive leaf to be opened (see CONSTANT LATCHING BOLT, DEAD BOLT, MANUAL BOLT).</u></p> <p>CONSTANT LATCHING BOLT. <u>Door locking hardware installed on the inactive leaf of a pair of doors, which has a bolt that automatically latches into the door frame or the floor, and which holds the inactive leaf in a closed position. The latch bolt is retracted manually to allow the inactive leaf to be opened.</u></p> <p>DEAD BOLT. <u>Door locking hardware with a bolt which is extended and retracted by action of the lock mechanism (see AUTOMATIC FLUSH BOLT, CONSTANT LATCHING BOLT, MANUAL BOLT).</u></p> <p>MANUAL BOLT. <u>Door locking hardware operable from one side of the door, or from the edge of a door leaf, with a bolt or rod extended and retracted by manual movement of the bolt or rod, such as a manual flush bolt or manual surface bolt (see AUTOMATIC FLUSH BOLT, CONSTANT LATCHING BOLT, DEAD BOLT).</u></p> <p>Revise as follows:</p> <p>1010.2.1 Unlatching. The unlatching of any door or leaf for egress shall require not more than one motion in a single linear or rotational direction to release all latching and all locking devices. <i>Manual bolt locks are not permitted.</i></p> <p>Exceptions:</p> <p>1. Places of detention or restraint.</p>		X			Clarification.

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	<p>2. Where manually operated manual bolt locks are permitted by Section 1010.2.5. 1010.2.4 Item 4.</p> <p>3. Doors with automatic flush bolts as permitted by Section 1010.2.4, Item 4.</p> <p><u>2. Doors with manual bolts, automatic flush bolts and constant latching bolts as permitted by Section 1010.2.4, Item 4.</u></p> <p><u>3. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1010.2.4, Item 5.</u></p> <p>1010.2.4 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:</p> <ol style="list-style-type: none"> 1. Places of detention or restraint. 2. In Group I-1, Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times. 3. In buildings in occupancy Group A having an <i>occupant load</i> of 300 or less, Groups B, F, M and S, and <i>in places of religious worship</i>, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided: <ol style="list-style-type: none"> 3.1 The locking device is readily distinguishable as locked. 3.2 A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background. 3.3 The use of the key-operated locking device is revocable by the <i>building official</i> for due cause. 4. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface mounted hardware. Manual bolt locks bolts, automatic flush bolts, and constant latching bolts on the inactive leaf of a pair of doors in accordance with Table 1010.2.4, provided the inactive leaf having a manual bolt lock, automatic flush bolt, or constant latching bolt does not 					

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	<p>have a doorknob, panic hardware, or similar <u>operating hardware</u>.</p> <p>5. Doors from individual <i>dwelling</i> or <i>sleeping units</i> of Group R occupancies having an <i>occupant load</i> of 10 or less are permitted to be equipped with a night latch, <i>dead bolt</i>, <u><i>manual bolt</i></u>, or security chain, provided such devices are openable from the inside without the use of a key or tool.</p> <p>.....</p> <p>Add new text as follows:</p> <p>TABLE 1010.2.4 MANUAL BOLTS, AUTOMATIC FLUSH BOLTS AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS</p> <table border="1"> <thead> <tr> <th rowspan="2">APPLICATION WITH A PAIR OF DOORS WITH AN ACTIVE LEAF AND INACTIVE LEAF</th> <th rowspan="2">THE PAIR OF DOORS ARE REQUIRED TO COMPLY WITH SECTION 716</th> <th colspan="3">PERMITTED USES OF MANUAL BOLTS, AUTOMATIC FLUSH BOLTS, AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS:</th> </tr> <tr> <th>Surface flush-mounted manual bolts</th> <th>Automatic flush bolts</th> <th>Constant latching bolts</th> </tr> </thead> <tbody> <tr> <td>Group R, F, or S occupancy (as permitted by Section 703.5)</td> <td>No</td> <td>P</td> <td>P</td> <td>P</td> </tr> <tr> <td>Group R, F, or S occupancy where the building is equipped with automatic sprinkler systems as required by Section 903.3.1.1 and the occupant load is not required to meet separate egress requirements</td> <td>No</td> <td>NP</td> <td>P</td> <td>P</td> </tr> <tr> <td>Group I-2 enclosed corridor and assembly rooms where the inactive leaf is not permitted to be opened or closed by manual means</td> <td>No</td> <td>NP</td> <td>P</td> <td>P</td> </tr> <tr> <td>Any occupancy where panic hardware is not required, egress doors are used to enter, exit, or leave the building and required to meet egress requirements</td> <td>No</td> <td>NP</td> <td>P</td> <td>P</td> </tr> <tr> <td>Group R occupancy where the inactive leaf is not required to meet egress requirements</td> <td>No</td> <td>NP</td> <td>P</td> <td>P</td> </tr> </tbody> </table> <p>P - Permitted; NP - Not permitted.</p> <p>a. <u>Not permitted in Group I-2 where corridor doors are required to be positive latching, and the storage or equipment room door is in the corridor.</u></p> <p>b. <u>Permitted where both doors are self-closing or automatic-closing, and have a coordinator that causes the inactive leaf to be closed prior to the active leaf.</u></p> <p>Delete without substitution:</p> <p>1010.2.5 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. On doors not required for egress in individual <i>dwelling units</i> or <i>sleeping units</i>. 2. Where a pair of doors serves a storage or equipment room, manually operated edge or surface-mounted bolts are permitted on the inactive leaf. 3. Where a pair of doors serves an <i>occupant load</i> of less than 50 persons in a Group B, F or S occupancy, manually operated edge or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall not contain doorknobs, <i>panic bars</i> or similar operating hardware. 	APPLICATION WITH A PAIR OF DOORS WITH AN ACTIVE LEAF AND INACTIVE LEAF	THE PAIR OF DOORS ARE REQUIRED TO COMPLY WITH SECTION 716	PERMITTED USES OF MANUAL BOLTS, AUTOMATIC FLUSH BOLTS, AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS:			Surface flush-mounted manual bolts	Automatic flush bolts	Constant latching bolts	Group R, F, or S occupancy (as permitted by Section 703.5)	No	P	P	P	Group R, F, or S occupancy where the building is equipped with automatic sprinkler systems as required by Section 903.3.1.1 and the occupant load is not required to meet separate egress requirements	No	NP	P	P	Group I-2 enclosed corridor and assembly rooms where the inactive leaf is not permitted to be opened or closed by manual means	No	NP	P	P	Any occupancy where panic hardware is not required, egress doors are used to enter, exit, or leave the building and required to meet egress requirements	No	NP	P	P	Group R occupancy where the inactive leaf is not required to meet egress requirements	No	NP	P	P					
APPLICATION WITH A PAIR OF DOORS WITH AN ACTIVE LEAF AND INACTIVE LEAF	THE PAIR OF DOORS ARE REQUIRED TO COMPLY WITH SECTION 716			PERMITTED USES OF MANUAL BOLTS, AUTOMATIC FLUSH BOLTS, AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS:																																			
		Surface flush-mounted manual bolts	Automatic flush bolts	Constant latching bolts																																			
Group R, F, or S occupancy (as permitted by Section 703.5)	No	P	P	P																																			
Group R, F, or S occupancy where the building is equipped with automatic sprinkler systems as required by Section 903.3.1.1 and the occupant load is not required to meet separate egress requirements	No	NP	P	P																																			
Group I-2 enclosed corridor and assembly rooms where the inactive leaf is not permitted to be opened or closed by manual means	No	NP	P	P																																			
Any occupancy where panic hardware is not required, egress doors are used to enter, exit, or leave the building and required to meet egress requirements	No	NP	P	P																																			
Group R occupancy where the inactive leaf is not required to meet egress requirements	No	NP	P	P																																			

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	<p>4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge or surface-mounted bolts are permitted on the inactive leaf provided that such inactive leaf is not needed to meet egress capacity requirements and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.</p> <p>5. Where a pair of doors serves patient care rooms in Group I-2 occupancies, self-latching edge or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress capacity requirements and the inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.</p>					
E44-21	<p>Revise as follows:</p> <p>1010.2.3 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.</p> <p>Exceptions: Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the latch release on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided that the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.</p> <p>1. <u>Locks used only for security purposes and not used for normal operation are permitted at any height.</u></p> <p>2. <u>Where the International Swimming Pool and Spa Code requires restricting access to a pool, spa, or hot tub, on the ingress side of the door or gate providing access to a pool, spa, or hot tub, the operable parts of the latch release on self-latching devices shall be permitted to be at and where door and gate latch release mechanisms are accessed from the outside of the barrier and are not of the self-locking type, such mechanism shall be located above the finished floor or ground surface, not less than 52 inches (1219 mm) and not greater than 54 inches (1370 mm) maximum above the finished floor or ground, provided that the self-latching device</u></p>		X			Clarification.

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	<u>latch release mechanisms is not a self-locking devices type such as where the lock is operated by means of a key, electronic opener or integral combination lock.</u>					
E45-21	<p>Revise as follows:</p> <p>1010.2.4 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:</p> <ol style="list-style-type: none"> 1. Places of detention or restraint. 2. In Group I-1, Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times. 3. In buildings in occupancy Group A having an <i>occupant load</i> of 300 or less, Groups B, F, M and S, and <i>of religious worship</i>, the main <u>door or</u> doors are permitted to be equipped with key-operated locking devices from the egress side provided: <ol style="list-style-type: none"> 3.1. <u>The doors are the main exterior doors to the building, or the doors are the main doors to the tenant space.</u> 3.2. The locking device is readily distinguishable as locked. 3.3. 3.2 A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background. 3.4. 3.3. The use of the key-operated locking device is revocable by the <i>building official</i> for due cause. <p>.....</p>		X			Clarification.
E46-21	<p>Revise as follows:</p> <p>1010.2.4 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:</p> <ol style="list-style-type: none"> 1. Places of detention or restraint. 2. In Group I-1, Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care 		X			Clarification

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times.</p> <p>3. In buildings in occupancy Group A having an <i>occupant load</i> of 300 or less, Groups B, F, M and S, and of <i>religious worship</i>, the main <u>door or</u> doors are permitted to be equipped with key-operated locking devices from the egress side provided:</p> <p>3.1. <u>The doors are the main exterior doors to the building, or the doors are the main doors to the tenant space.</u></p> <p>3.2. The locking device is readily distinguishable as locked.</p> <p>3.3. 3.2 A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.</p> <p>3.4. 3.3. The use of the key-operated locking device is revocable by the <i>building official</i> for due cause.</p> <p>4. Where egress doors are used in pairs, <i>approved</i> automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware.</p> <p>5. Doors from individual <i>dwelling</i> or <i>sleeping units</i> of Group R occupancies having an occupant load of 10 or less <u>permitted to have a single exit in accordance with Section 1006.2.1 or 1006.3.4</u> are permitted to be equipped with a night latch, dead bolt or security chain, <u>that require a second releasing motion,</u> provided such devices are openable from the inside without the use of a key or tool.</p> <p>.....</p>					
E47-21	1010.2.7 Stairway doors. Interior <i>stairway</i> means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.		X			Clarification.

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	<p>Exceptions:</p> <ol style="list-style-type: none"> 1. <i>Stairway</i> discharge doors shall be openable from the egress side and shall only be locked from the opposite side. 2. This section shall not apply to doors arranged in accordance with Section 403.5.3. 3. <i>Stairway</i> exit doors are permitted to be locked from the side opposite the egress side, provided that they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon <u>when any one of the following conditions occur:</u> <ol style="list-style-type: none"> 3.1. <u>Shall be capable of being unlocked individually or simultaneously upon A</u> a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building. 3.2. <u>Shall unlock simultaneously upon activation</u> Activation of a fire alarm signal when a fire alarm system is present in an area served by the stairway. 3.3. <u>Shall unlock upon failure</u> Failure of the power supply to the electric lock or locking system. 4. <i>Stairway exit</i> doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single <i>exit stairway</i> where permitted in Section 1006.3.4. 5. <i>Stairway exit</i> doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the dwelling unit is from a single exit stairway where permitted in Section 1006.3.4. 					
E49-12	<p>Add new text as follows: <u>1010.2.10 Monitored or recorded egress, and access control systems.</u> <u>Where electrical systems that monitor or record egress activity are incorporated, or where the door has an access control system, the locking system on the egress side of the door shall comply with Section 1010.2.11, 1010.2.12, 1010.2.13, 1010.2.14 or 1010.2.15 or shall be readily openable from the egress side without the use of a key or special knowledge or effort.</u></p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
E51-21	<p>Revise as follows:</p> <p>1010.2.11 Door hardware release of electrically locked egress doors. Door hardware release of electric <u>electrical</u> locking systems shall be permitted on doors in the <i>means of egress</i> in any occupancy except Group H where installed and operated in accordance with all of the following:</p> <ol style="list-style-type: none"> 1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions. 2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.2.1. 3. Operation of the door hardware directly interrupts the power to the electric lock and unlocks the door immediately. 4. Loss of power to the <u>electrical</u> locking system automatically unlocks the door <u>electric lock</u>. 5. Where <i>panic or fire exit hardware</i> is required by Section 1010.2.9, operation of the <i>panic or fire exit hardware</i> also releases the electric lock. 6. The locking system units shall be <i>listed</i> in accordance with UL 294. <p>1010.2.12 Sensor release of electrically locked egress doors. Sensor release of electric <u>electrical</u> locking systems shall be permitted on doors located in the <i>means of egress</i> in any occupancy except Group H where installed and operated in accordance with all of the following criteria:</p> <ol style="list-style-type: none"> 1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric <u>al</u> locking system to unlock <u>the electric lock</u>. 2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor. <u>Upon a signal from a sensor or loss of power to the sensor, the electrical locking system shall unlock the electric lock.</u> 3. Loss of power to the <u>electric</u> lock or <u>electrical</u> locking system shall automatically unlock the electric locks. 4. The doors shall be arranged to unlock <u>the electric lock</u> from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—<i>independent of other electronics</i>—and the electric lock shall remain unlocked for not less than 30 seconds.</p> <p>5. Activation of the building <i>fire alarm system</i>, where provided, shall automatically unlock the electric lock, and the electric lock shall remain unlocked until the <i>fire alarm system</i> has been reset.</p> <p>6. Activation of the building <i>automatic sprinkler system</i> or fire detection system, where provided, shall automatically unlock the electric lock. The electric lock shall remain unlocked until the <i>fire alarm system</i> has been reset.</p> <p>7. Emergency lighting shall be provided on the egress side of the door.</p> <p>8. The door locking system units shall be <i>listed</i> in accordance with UL 294.</p> <p>1010.2.13 Delayed egress. Delayed egress <u>electrical</u> locking systems shall be permitted to be installed on doors <u>in the means of egress</u> serving the following occupancies in buildings that are equipped throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1 or an <i>approved automatic smoke or heat detection system</i> installed in accordance with Section 907.</p> <ol style="list-style-type: none"> Group B, F, I, M, R, S and U occupancies. Group E classrooms with an <i>occupant load</i> of less than 50. In courtrooms in Group A-3 and B occupancies, delayed egress electrical locking systems shall be permitted to be installed on exit or <i>exit access</i> doors, other than the main exit or <i>exit access</i> door, in buildings that are equipped throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1. <p>1010.2.13.1 Delayed egress locking system. The delayed egress <u>electrical</u> locking system shall be installed and operated in accordance with all of the following:</p> <ol style="list-style-type: none"> The delay <u>electronics</u> of the delayed egress <u>electrical</u> locking system shall deactivate upon actuation of the 					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p><i>automatic sprinkler system or automatic fire detection system, allowing immediate free egress.</i></p> <p>2. The delay electronics of the delayed egress <u>electrical locking system</u> shall deactivate upon loss of power controlling to the lock <u>electrical locking system</u> or electric lock mechanism, allowing immediate free egress.</p> <p>3. The delay of the delayed egress <u>electrical locking system</u> shall have the capability of being deactivated at the <i>fire command center</i> and other <i>approved</i> locations.</p> <p>4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have <u>has been deactivated</u>, rearming the delay electronics shall be by manual means only.</p> <p>Exception: Where <i>approved</i>, a delay of not more than 30 seconds is permitted on a delayed egress door</p> <p>.....</p> <p>1010.2.14 Controlled egress doors in Groups I-1 and I-2. Electric <u>Controlled egress electrical locking systems</u>, including electro-mechanical locking systems and electromagnetic locking systems, where egress is controlled by <u>authorized personnel</u>, shall be permitted to be locked on doors in the <i>means of egress</i> in Group I-1 or I-2 occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1 or an <i>approved automatic smoke detection system</i> installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:</p> <ol style="list-style-type: none"> 1. The door's <u>electric locks</u> shall unlock on actuation of the <i>automatic sprinkler system or automatic smoke detection system, allowing immediate free egress.</i> 2. The door's <u>electric locks</u> shall unlock on loss of power controlling to the lock <u>electrical locking system</u> or to the electric lock mechanism, allowing immediate free egress. 					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>3. The door electrical locking system shall be installed to have the capability of being unlocked <u>unlocking the electric locks</u> by a switch located at the <i>fire command center</i>, a nursing station or other <i>approved</i> location. The switch shall directly break power to the <u>electric</u> lock.</p> <p>4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an <i>exit</i>.</p> <p>5. The procedures for unlocking the doors shall be described and <i>approved</i> as part of the emergency planning and preparedness required by Chapter 4 of the International Fire Code.</p> <p>6. All clinical staff shall have the keys, codes or other means necessary to operate the <u>controlled egress electrical</u> locking systems.</p> <p>7. Emergency lighting shall be provided at the door.</p> <p>8. The door locking system units shall be <i>listed</i> in accordance with UL 294.</p> <p>Exceptions:</p> <p>1. Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a psychiatric or cognitive treatment area.</p> <p>2. Items 1 through 4 shall not apply to doors to areas where a <i>listed</i> egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 <i>hospital</i>.</p>					
E52-21	<p>Revise as follows:</p> <p>1010.2.11 Door hardware release of electrically locked egress doors. Door hardware release of electric locking systems shall be permitted on doors in the <i>means of egress</i> in any occupancy except Group H where installed and operated in accordance with all of the following:</p> <p>.....</p> <p>8. The <u>locking system units</u> <u>electro-mechanical or electromagnetic locking device</u> shall be <i>listed</i> in accordance with <u>either</u> UL 294 <u>or</u> UL 1034.</p> <p>1010.2.12 Sensor release of electrically locked egress doors. Sensor release of electric locking systems shall be permitted on doors located in the <i>means of egress</i> in any occupancy except</p>		X			Additional standard provided.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Group H where installed and operated in accordance with all of the following criteria:</p> <p>.....</p> <p>8. The door locking system units <u>electro-mechanical or electromagnetic locking device</u> shall be <i>listed</i> in accordance with <u>either</u> UL 294 <u>or</u> UL 1034.</p> <p>1010.2.13.1 Delayed egress locking system. The delayed egress locking system shall be installed and operated in accordance with all of the following:</p> <p>.....</p> <p>8. The delayed egress locking system units <u>electro-mechanical or electromagnetic locking device</u> shall be <i>listed</i> in accordance with <u>either</u> UL 294 <u>or</u> UL 1034.</p> <p>1010.2.14 Controlled egress doors in Groups I-1 and I-2. Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the <i>means of egress</i> in Group I-1 or I-2 occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1 or an <i>approved automatic smoke detection system</i> installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:</p> <p>.....</p> <p>8. The door locking system units <u>electro-mechanical or electromagnetic locking device</u> shall be <i>listed</i> in accordance with <u>either</u> UL 294 <u>or</u> UL 1034.</p> <p>Exceptions:</p> <p>.....</p>					
E56-21	<p>Add new text as follows:</p> <p>1010.2.15 Elevator lobby exit access doors. <u>Electrically locked exit access doors providing egress from elevator lobbies shall be permitted where all the following conditions are met:</u></p> <p><u>1. For all occupants of the floor, the path of exit access travel to not less than two exits is not required to pass through the elevator lobby.</u></p> <p><u>2. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, and</u></p>		X			Provides alternate design options for elevator lobbies.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>and a fire alarm system in accordance with Section 907. Elevator lobbies shall be provided with an approved automatic smoke detection system in accordance with Section 907.</u></p> <p><u>3. Activation of either the automatic sprinkler system or automatic smoke detection system shall automatically unlock the electric lock providing exit access from the elevator lobby, and the electric lock shall remain unlocked until the systems are reset.</u></p> <p><u>4. The electric locks shall unlock on loss of power to the electric lock or electrical locking system.</u></p> <p><u>5. The electric locks shall have the capability of being unlocked by a switch located at the fire command center, security station, or other approved location.</u></p> <p><u>6. A two-way communication system connected to an approved constantly attended station installed in accordance in compliance with Sections 1009.8.1 and 1009.8.2, shall be located in the elevator lobby adjacent to the electrically locked exit access door and connected to an approved constantly connected station. This constantly attended station shall have the capability of unlocking the electric locks of the elevator lobby exit access doors.</u></p> <p><u>7. Emergency lighting shall be provided in the elevator lobby on both sides of the electrically locked door.</u></p> <p><u>8. The door locking system units shall be listed in accordance with UL 294.</u></p> <p>Revise as follows:</p> <p>1016.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.</p> <p>1. <i>Exit access</i> through an enclosed elevator lobby is permitted. Where access to two or more exits or exit access doorways is required in Section 1006.2.1, access to not less than one of the required <i>exits</i> shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of <i>exit access</i> travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the <i>exit</i> unless direct access to an <i>exit</i> is required by other sections of this code.</p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>2. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.</p> <p>Exception: <i>Means of egress</i> are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.</p> <p>3. An <i>exit access</i> shall not pass through a room that can be locked to prevent egress.</p> <p>Exception: <u>An electrically locked exit access door providing egress from an elevator lobby shall be permitted in accordance with Section 1010.2.15.</u></p> <p>.....</p> <p>3006.4 Means of egress. Elevator lobbies shall be provided with not less than one <i>means of egress</i> complying with Chapter 10 and other provisions in this code. Egress through an enclosed elevator lobby shall be permitted in accordance with Item 1 of Section 1016.2. <u>Electrically locked exit access doors providing egress from elevator lobbies shall be permitted in accordance with Section 1010.2.15.</u></p>					
E58-21	<p>Revise as follows:</p> <p>1011.2 Width and capacity. The required capacity of <i>stairways</i> shall be determined as specified in Section 1005.1, but the minimum width shall be not less than 44 inches (1118 mm). See Section 1009.3 for <i>accessible means of egress stairways</i>. <u>The minimum width for stairways that serve as part of the accessible means of egress shall comply with Section 1009.3.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Stairways</i> serving an <i>occupant load</i> of less than 50 shall have a width of not less than 36 inches (914 mm). <i>Spiral stairways</i> as provided for in Section 1011.10. Where an incline platform lift or <i>stairway</i> chairlift is installed on <i>stairways</i> serving occupancies in Group R-3, or within <i>dwelling units</i> in occupancies in Group R-2, a clear passage width not less than 20 inches (508 mm) shall be provided. Where the seat and platform can be folded when not in use, the distance shall be measured from the folded position. 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
E59-21	<p>Revise as follows:</p> <p>1011.3 Headroom. <i>Stairways</i> shall have a headroom clearance of not less than 80 inches (2032 mm) measured vertically from a line connecting the edge of the <i>nosings</i>. Such headroom shall be continuous above the <i>stairway</i> to the point where the line intersects the landing below, one tread depth beyond the bottom riser. The minimum clearance shall be maintained the full width of the <i>stairway</i> and landing.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Spiral stairways</i> complying with Section 1011.10 are permitted a 78-inch (1981 mm) headroom clearance. In Group R-3 occupancies; within <i>dwelling units</i> in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual <i>dwelling units</i> in Group R-2 occupancies; where the <i>nosings</i> of treads at the side of a <i>flight</i> extend under the edge of a floor opening through which the <i>stair</i> passes, the floor opening shall be allowed to project horizontally into the required headroom not more than 4³/₄ inches (121 mm). <p>1011.5.5.1 Nosing projection size. The leading edge (nosings) of treads nosings shall project not more than 11/4 inches (32 mm) beyond the tread below.</p> <p>1011.5.5.2 Nosing projection uniformity. Nosing projections of the leading edges shall be of uniform size, including the projections of the nosings's leading edge nosings of the floor or landing at the top of a <i>flight</i>.</p> <p>1014.2 Height. Handrail height, measured above stair tread from a line connecting the nosings of flights of stairs or finish surface of ramp slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). Handrail height of alternating tread devices and ships ladders, measured above tread from a line connecting the nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where <i>handrail</i> fittings or bendings are used to provide continuous transition between flights, the fittings or bendings shall be permitted to exceed the maximum height. 		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>2. In Group R-3 occupancies; within <i>dwelling units</i> in Group R-2 occupancies; and in Group U occupancies that are associated with a Group R-3 occupancy or associated with individual <i>dwelling units</i> in Group R-2 occupancies; where <i>handrail</i> fittings or bendings are used to provide continuous transition between flights, transition at <i>winder</i> treads, transition from <i>handrail</i> to guard, or where used at the start of a <i>flight</i>, the <i>handrail</i> height at the fittings or bendings shall be permitted to exceed the maximum height.</p> <p>3. <i>Handrails</i> on top of a <i>guard</i> where permitted along stepped <i>aisles</i> and ramped <i>aisles</i> in accordance with Section 1030.16.</p> <p>1015.3 Height. Required <i>guards</i> shall be not less than 42 inches (1067 mm) high, measured vertically as follows:</p> <ol style="list-style-type: none"> 1. From the adjacent walking surfaces. 2. On stairways and stepped <i>aisles</i>, from the line connecting the leading edges of the tread nosings. 3. On <i>ramps</i> and ramped <i>aisles</i>, from the <i>ramp</i> surface at the guard. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. For occupancies in Group R-3 not more than three stories above grade in height and within individual <i>welling units</i> in occupancies in Group R-2 not more than three stories above grade in height with separate <i>means of egress</i>, required <i>guards</i> shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces. 2. For occupancies in Group R-3, and within individual <i>dwelling units</i> in occupancies in Group R-2, <i>guards</i> on the open sides of <i>stairs</i> shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the <u>nosings</u> leading edges of the treads. 3. For occupancies in Group R-3, and within individual <i>dwelling units</i> in occupancies in Group R-2, where the top of the <i>guard</i> serves as a <i>handrail</i> on the open sides of <i>stairs</i>, the top of the <i>guard</i> shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the <u>nosings</u> leading edges of the treads. 4. The <i>guard</i> height in assembly seating areas shall comply with Section 1030.17 as applicable. 					

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		Sub Code:				
	<p>5. Along <i>alternating tread devices</i> and ships ladders, <i>guards</i> where the top rail serves as a <i>handrail</i> shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from a line connecting the leading edge of the treads device tread nosing.</p> <p>6. In Group F occupancies where <i>exit access stairways</i> serve fewer than three stories and such <i>stairways</i> are not open to the public, and where the top of the <i>guard</i> also serves as a <i>handrail</i>, the top of the <i>guard</i> shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the nosings leading edges of the treads.</p>					
E60-21	<p>Revise as follows:</p> <p>1011.5.2 Riser height and tread depth. <i>Stair</i> riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the <i>nosings</i> of adjacent treads or between the stairway landing and the adjacent tread. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's <i>nosing</i>. <i>Winder</i> treads shall have a minimum tread depth of 11 inches (279 mm) between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Spiral stairways</i> in accordance with Section 1011.10. <i>Stairways</i> connecting stepped <i>aisles</i> to cross <i>aisles</i> or concourses shall be permitted to use the riser/tread dimension in Section 1030.14.2. In Group R-3 occupancies; within <i>dwelling units</i> in Group R-2 occupancies <u>not required by Chapter 11 to be Accessible</u> or <u>Type A dwelling</u> or sleeping units; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual <i>dwelling units</i> in Group R-2 occupancies; the maximum riser height shall be 7³/₄ inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum <i>winder</i> tread depth at the walkline shall be 10 inches (254 mm); and the minimum <i>winder</i> tread depth shall be 6 inches (152 mm). 		X		Clarification.	

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>A <i>nosing</i> projection not less than $\frac{3}{4}$ inch (19.1 mm) but not more than $1\frac{1}{4}$ inches (32 mm) shall be provided on <i>stairways</i> with solid risers where the tread depth is less than 11 inches (279 mm).</p> <p>4. See Section 503.1 of the International Existing Building Code for the replacement of existing <i>stairways</i>.</p> <p>5. In Group I-3 facilities, <i>stairways</i> providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m²) in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).</p>					
E62-21	<p>Revise as follows:</p> <p>1011.5.4.1 Nonuniform height risers. Where the bottom or top riser adjoins a sloping <i>public way</i>, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches (102 mm) in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of <i>stair</i> width. The <i>nosings</i> or leading edges of treads at such nonuniform height risers shall have a distinctive marking stripe, different from any other <i>nosing</i> marking provided on the <i>stair flight</i>. The distinctive marking stripe shall be visible in descent of the <i>stair</i> and shall have a slip-resistant surface. Marking stripes shall have a width of not less than 1 inch (25 mm) but not more than 2 inches (51 mm).</p>		X			Clarification.
E64-21	<p>Revise as follows:</p> <p>1011.5.5.1 Nosing projection size. The leading edge (<i>nosings</i>) of treads shall project not more than $1\frac{1}{4}$ inches (32 mm) <u>beyond over the required depth of the tread below.</u></p> <p>Exception: <u>When solid risers are not required, the nosing projection is permitted to exceed the maximum projection limit over the tread below.</u></p>		X			Allows for the possibility for the treads to be larger than 11”.
E69-21	<p>Revise as follows:</p> <p>1013.2 Low-level exit signs in Group R-1. Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5. The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 18 inches (455 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where</p>	X			Varies based upon the size and configuration of the building.	Remove redundant code requirement for new buildings.

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Sub Code:						
	mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side. Exception: <u>Low-level exit signs are not required in Group R-1 occupancies when the building is equipped throughout with an automatic sprinkler system installed in accordance with Sections 903.3.1.1 or 903.3.1.2.</u>					
E71-21	Revise as follows: 1013.5 Internally illuminated exit signs. Electrically powered, <i>self-luminous</i> and <i>photoluminescent</i> exit signs shall be <i>listed</i> and labeled in accordance with UL 924 and shall be installed in accordance with the manufacturer’s instructions and Chapter 27. Exit signs shall be illuminated at all times. <u>Exit signs shall be easily discernable and legible at all times.</u> Add new text as follows: 1013.5.1 Photoluminescent exit signs installation. . <u>Photoluminescent exit signs shall be provided with an illumination source to charge the exit sign in accordance with the manufacturers instructions.</u>		X			Clarification.
E73-21	Add new text as follows: 1014.3 Lateral location. <u>Handrails located outward from the edge of the walking surface of flights of stairways, ramps, stepped aisles and ramped aisles shall be located within 6 inches (152.4 mm) measured horizontally from the edge of the walking surface. Handrails projecting into the width of the walking surface shall comply with Section 1014.8.</u>		X			Improved Safety.
E74-21	Revise as follows: 1014.4 Continuity. <i>Handrail</i> gripping surfaces shall be continuous, without interruption by newel posts or other obstructions. Exceptions: 1. Handrails within <u>Within a dwelling unit units, are permitted, that is not an Accessible unit or Type A unit, the continuity of handrail gripping surfaces is allowed</u> to be interrupted by a newel post at a turn or landing.	X			Over \$1,000	Coordinates with the federal accessibility requirements in the ADA.
E76-21	Revise as follows: 1014.6 Handrail extensions. <i>Handrails</i> shall return to a wall, <i>guard</i> or the walking surface or shall be continuous to the		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><i>handrail</i> of an adjacent <i>flight of stairs</i> or <i>ramp</i> run. Where <i>handrails</i> are not continuous between flights, the <i>handrails</i> shall extend horizontally not less than 12 inches (305 mm) beyond the top riser <u>landing nosing</u> and continue to slope for the depth of one tread beyond the bottom riser <u>thread nosing</u>. At <i>ramps</i> where <i>handrails</i> are not continuous between runs, the <i>handrails</i> shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of <i>ramp</i> runs. The extensions of <i>handrails</i> shall be in the same direction of the flights of <i>stairs</i> at <i>stairways</i> and the <i>ramp</i> runs at <i>ramps</i> and shall extend the required minimum length before any change in direction or decrease in the clearance required by Section 1014.4 or 1014.7. The length of the extension shall be measured in accordance with Section 1014.4 or 1014.7, whichever is less.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Handrails</i> within a <i>dwelling unit</i> that is not required to be <i>accessible</i> need extend only from the top riser to the bottom riser. <i>Handrails</i> serving <i>aisles</i> in rooms or spaces used for assembly purposes are permitted to comply with the <i>handrail</i> extensions in accordance with Section 1030.16. <i>Handrails</i> for <i>alternating tread devices</i> and ships ladders are permitted to terminate at a location vertically above the top and bottom risers. <i>Handrails</i> for <i>alternating tread devices</i> are not required to be continuous between flights or to extend beyond the top or bottom risers. 					
E77-21	<p>Revise as follows:</p> <p>1014.7 Clearance. Clear space between a <i>handrail</i> and a wall or other surface shall be not less than 1½ inches (38 mm). A <i>handrail</i> and a wall or other surface adjacent to the <i>handrail</i> shall be free of any sharp or abrasive elements.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> A decrease in the clearance due to the curvature or angle of <u>handrail returns shall be allowed.</u> <u>Mounting flanges, no more than 1/2" (12.7 mm) thick at the returned ends of handrails shall be allowed.</u> 		X			Improves safety.
E82-21	<p>1015.3 Height. Required <i>guards</i> shall be not less than 42 inches (1067 mm) high, measured vertically as follows:</p> <ol style="list-style-type: none"> From the adjacent walking surfaces. 	X			Minimal.	Brings consistency across I-Codes.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>2. On <i>stairways</i> and stepped <i>aisles</i>, from the line connecting the leading edges of the tread <i>nosings</i>.</p> <p>3. On <i>ramps</i> and ramped <i>aisles</i>, from the <i>ramp</i> surface at the guard.</p> <p>Exceptions:</p> <p>1. For occupancies in Group R-3 not more than three stories above grade in height and within individual <i>dwelling units</i> in occupancies in Group R-2 not more than three stories above grade in height with separate <i>means of egress</i>, required <i>guards</i> shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces.</p> <p>2. <u>For occupancies in Group R-2 and R-3, within the interior conditioned space in of individual dwelling units, where the open-sided walking surface is or landing are located not more than 25 feet (7.62 meters) measured vertically to the floor or grade walking surface below, required guards shall not be less than 36 inches (914 mm) in height measured vertically above the adjacent walking surface or landing.</u></p> <p>.....</p>				—	
E83-21	<p>Revise as follows:</p> <p>1015.8 Window openings. Windows in Group R-2 and R-3 buildings including <i>dwelling units</i>, where the bottom of the clear opening of an operable window is located less than 36 inches (914 mm) above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, shall comply with one of the following:</p> <p>1. <u>Where the bottom of the clear opening of the window is located more than 72 inches (1829 mm) and less than 75 feet (22 860 mm) above the finished grade or other surface below on the exterior of the building, the window shall comply with one of the following:</u> Operable windows where the top of the sill of the opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below and that are provided with window fall prevention devices that comply with ASTM F2006.</p> <p><u>1.1-2.</u> Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>opening when the window is in its largest opened position, <u>provided the opening is not required for emergency escape or rescue.</u></p> <p><u>1.2.3. Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090.</u></p> <p><u>1.3.4. Operable windows where the openings that are provided with window opening control devices that comply with Section 1015.8.1 ASTM F2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1031.3.1 for emergency escape rescue openings.</u></p> <p><u>2. Where the bottom of the clear opening of the window is located 75 feet (22 860 mm) or more above from the finished grade or other surface below on the exterior of the building, the window shall comply with one of the following:</u></p> <p><u>2.1. Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090.</u></p> <p><u>2.2. Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position.</u></p> <p><u>2.3. Window fall prevention devices that comply with ASTM F2006.</u></p> <p>Delete without substitution: 1015.8.1 Window opening control devices. Window opening control devices shall comply with F2090-17. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1031.3.1.</p>					
E85-21	<p>Revise as follows:</p> <p>1016.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.</p> <p>1. <i>Exit access</i> through an enclosed elevator lobby is permitted. Where access to two or more exits or exit</p>		X			Editorial

Table 6. 2024 IBC Changes Cost Impact

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Sub Code:						
	<p>access doorways is required in Section 1006.2.1, access to not less than one of the required <i>exits</i> shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of <i>exit access</i> travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the <i>exit</i> unless direct access to an <i>exit</i> is required by other sections of this code.</p> <p>2. <u>In other than Group H occupancies, egress from a room or space is allowed to pass through adjoining or intervening rooms or areas provided that such adjoining rooms or areas and the area served are accessory to one or the other and provide a discernible path of egress travel to an exit.</u> Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.</p> <p style="padding-left: 40px;">Exception: <i>Means of egress</i> are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.</p> <p>3. <u>In Group H occupancies, egress from a room or space is allowed to pass through adjoining or intervening rooms or areas provided that such adjoining rooms or areas are the same or lesser hazard occupancy group and provide a discernible path of egress travel to an exit.</u></p> <p>3.4. An <i>exit access</i> shall not pass through a room that can be locked to prevent egress.</p> <p>4.5. <i>Means of egress</i> from <i>dwelling units</i> or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.</p> <p>5.6. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.</p> <p>Exceptions:</p> <p>1. <i>Means of egress</i> are not prohibited through a kitchen area serving adjoining rooms constituting part of the same <i>unit</i> or <i>sleeping unit</i>.</p>					

Table 6. 2024 IBC Changes Cost Impact

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		Sub Code:				
	<p>2. <i>Means of egress</i> are not prohibited through stockrooms in Group M occupancies where all of the following are met:</p> <p>2.1. The stock is of the same hazard classification as that found in the main retail area.</p> <p>2.2. Not more than 50 percent of the <i>exit access</i> is through the stockroom.</p> <p>2.3. The stockroom is not subject to locking from the egress side.</p> <p>2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) <i>aisle</i> defined by full- or partial-height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.</p>					
E86-21	<p>Revise as follows: TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE^a by referring to <u>1017.2.3</u>: For increased distance limitation in Group H-5</p> <p>Add new text as follows: 1017.2.3 Group H-5 Increase. <u>The maximum <i>exit access</i> travel distance shall be 300 feet (91 m) in the fabrication areas of Group H-5 occupancies where all of the following conditions are met:</u></p> <ol style="list-style-type: none"> 1. <u>The width of the fabrication area is 300 feet (91 m) or greater.</u> 2. <u>The area of the fabrication area is 220,000 sq. ft. (18,600 m²) or greater.</u> 3. <u>The height of the fabrication area, measured between the raised metal floor and the clean filter ceiling, is 16 feet (48768 mm) or greater.</u> 4. <u>The supply ventilation rate is 20 cfm/sq. ft. or greater and shall remain operational.</u> 	X			Optional increase in exit access travel distance in building design can lead to construction cost decrease.	Increase in egress travel distance for Group H-5 facilities.
E88-21	<p>Revise as follows: 1019.3 Occupancies other than Groups I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing <i>exit access stairways</i> or <i>ramps</i> shall be enclosed with a shaft enclosure constructed in accordance with Section 713.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <u><i>Exit access stairways</i> and <i>ramps</i> within a two-story opening complying with Section 712.1.9. that serve or atmospherically communicate between only two adjacent stories. Such interconnected stories shall not be open to other stories.</u> 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	2. In Group R-1, R-2 or R-3 occupancies, <i>exit access stairways</i> and <i>ramps</i> connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit. 3.					
E96-21	<p>Revise as follows:</p> <p>1023.5 Penetrations. Penetrations into or through <i>interior exit stairways</i> and <i>ramps</i> are prohibited except for the following:</p> <ol style="list-style-type: none"> 1. Equipment and ductwork necessary for independent ventilation or pressurization. 2. <i>Fire protection systems.</i> 3. Security systems. 4. Two-way communication systems. 5. Electrical raceway for fire department communication systems. 6. Electrical raceway serving the <i>interior exit stairway</i> and <i>ramp</i> and terminating at a steel box not exceeding 16 square inches (0.010 m²). 7. Structural elements <u>supporting the <i>interior exit stairway</i> or <i>ramp</i> or enclosure</u>, such as beams or joists. 8. <u>Structural elements supporting a roof at the top of the <i>interior exit stairway</i> or <i>ramp</i></u>, such as beams or joists. <p>.....</p> <p>1024.6 Penetrations. Penetrations into or through an <i>exit passageway</i> are prohibited except for the following:</p> <ol style="list-style-type: none"> 1. Equipment and ductwork necessary for independent ventilation or pressurization. 2. <i>Fire protection systems.</i> 3. Security systems. 4. Two-way communication systems. 5. Electrical raceway for fire department communication. 6. Electrical raceway serving the <i>exit passageway</i> and terminating at a steel box not exceeding 16 square inches (0.010 m²). 7. Structural elements <u>supporting a floor or roof at the top of the <i>exit passageway</i></u>, such as beams and joists. <p>.....</p>	X			Allowed structural penetrations, simplifying framing at exit enclosures.	Simplified framing at exit enclosures.
E97-21	<p>Revise as follows:</p> <p>1023.7 Interior exit stairway and ramp exterior walls. <i>Exterior walls</i> of the <i>interior exit stairway</i> or <i>ramp</i> shall comply with the</p>			X	If more roof assemblies and related	Improved safety.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>requirements of Section 705 for <i>exterior walls</i>. Where nonrated walls or unprotected openings enclose the exterior of the <i>stairway</i> or <i>ramps</i> and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), <u>building construction within 10 feet of the exterior walls of the interior exit stairway or ramp shall comply with Section 1023.7.1 and 1023.7.2.</u></p> <p>Add new text as follows:</p> <p>1023.7.1 Building exterior walls. <u>Building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening in an exterior interior exit stairway or ramp shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or ramp, or to the roof line, whichever is lower.</u></p> <p>1023.7.2 Roof assemblies. <u>Where the interior exit stairway or ramp extends above an adjacent roof of the same building, the adjacent lower-roof assembly shall have a fire resistance rating of not less than 1 hour and openings shall be protected by opening protectives having a fire protection rating of not less than ¾ hour. The fire resistance rating and opening protection shall extend horizontally a minimum of 10 feet (3048 mm) from the exterior wall of the stairway or ramp, or to the perimeter of the lower adjacent roof, whichever is less.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>The roof assembly need not be rated and openings in the roof need not be protected where they are adjacent to the penthouse of the stairway or ramp, unless otherwise required by this code.</u> <u>The adjacent roof assembly need not be rated and adjacent openings in the roof need not be protected where the exterior wall of the stairway or ramp has a fire-resistance rating of 1 hour and openings are protected by opening protectives having a fire protection rating of not less than 3/4 hours, extending a minimum of 10 feet (3048 mm) above the roof.</u> 				openings need to be of rated construction	

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E100-21	<p>Revise as follows: 1027.2 Use in a means of egress. <i>Exterior exit stairways</i> shall not be used as an element of a required <i>means of egress</i> for Group I-2 occupancies. For occupancies in other than Group I-2, <i>exterior exit stairways</i> and <i>ramps</i> shall be permitted <u>not be used</u> as an element of a required <i>means of egress</i> for buildings not exceeding six stories above grade plane <u>or that are high-rise buildings.</u></p>		X			Clarification.
E105-21	<p>Revise as follows: 1029.3 Construction and openings. Where an <i>egress court</i> serving a building or portion thereof is less than 10 feet (3048 mm) in width, the <i>egress court</i> walls shall have not less than 1-hour <i>fire-resistance-rated</i> construction for a distance of 10 feet (3048 mm) above the floor of the <i>egress court</i>. Openings within such walls shall be protected by opening protectives having a <i>fire protection rating</i> of not less than ³/₄ hour.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Egress courts</i> serving an <i>occupant load</i> of less than 10. <i>Egress courts</i> serving Group R-3. <u><i>Egress courts</i>, located at <i>grade</i>, which provide direct and unobstructed access to a <i>public way</i> through two or more independent paths. The minimum width provided along each path shall be based on the required width or the required capacity, whichever is greater, and shall be maintained along each path.</u> 	X			Reduces need to add opening protectives at doors and windows along egress courts.	Design flexibility.
E108-21	<p>Revise as follows: 1030.8 Common path of egress travel. The <i>common path of egress travel</i> <u>for a room or space used for assembly purposes having fixed seating</u> shall not exceed 30 feet (9144 mm) from any seat to a point where an occupant has a choice of two paths of egress travel to two <i>exits</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> For areas serving less than 50 occupants, the <i>common path of egress travel</i> shall not exceed 75 feet (22 860 mm). For <i>smoke-protected</i> or <i>open-air assembly seating</i>, the <i>common path of egress travel</i> shall not exceed 50 feet (15 240 mm). 		X			Clarification.
E109-21	<p>1030.9.5 Dead-end aisles. Each end of an <i>aisle</i> shall be continuous to a cross <i>aisle</i>, foyer, doorway, vomitory,</p>		X			Clarification.

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		Decrease	Neutral	Increase		
		Sub Code:				
	<p>concourse or <i>stairway</i> in accordance with Section 1030.9.7 having access to an <i>exit</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Dead-end <i>aisles</i> shall be not greater than 20 feet (6096 mm) in length. 2. Dead-end <i>aisles</i> longer than 16 rows <u>20 feet (6096 mm)</u> are permitted where seats beyond the 16th row <u>20 feet (6096 mm)</u> dead-end <i>aisle</i> are not more than 24 seats from another <i>aisle</i>, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row. <p>.....</p>					
E110-21	<p>Revise as follows:</p> <p>1030.9.5 Dead-end aisles. Each end of an <i>aisle</i> shall be continuous to a cross <i>aisle</i>, foyer, doorway, vomitory, concourse or <i>stairway</i> in accordance with Section 1030.9.7 having access to an <i>exit</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Dead-end <i>aisles</i> shall be not greater than 20 feet (6096 mm) in length. 2. Dead-end <i>aisles</i> longer than 16 rows are permitted where seats beyond the 16th row dead-end <i>aisle</i> are not more than 24 seats from another <i>aisle</i>, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row. 3. <u>Dead-end aisles serving fewer than 50 seats shall be permitted in accordance with Section 1030.8.</u> 3.4. For <i>smoke-protected</i> or <i>open-air assembly seating</i>, the dead-end <i>aisle</i> length of vertical <i>aisles</i> shall not exceed a distance of 21 rows. 4.5. For <i>smoke-protected</i> or <i>open-air assembly seating</i>, a longer dead-end <i>aisle</i> is permitted where seats beyond the 21-row dead-end <i>aisle</i> are not more than 40 seats from another <i>aisle</i>, measured along a row of seats having an <i>aisle</i> accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat 	X			Cost decrease through new theater design options.	Increased theater design options.

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	above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.					
E111-21	<p>Revise as follows: 1031.2 Where required. In addition to the <i>means of egress</i> required by this chapter, <i>emergency escape and rescue openings</i> shall be provided in the following occupancies:</p> <ol style="list-style-type: none"> Group R-2 occupancies located in stories with only one <i>exit</i> or <i>access</i> to only one <i>exit</i> as permitted by Tables 1006.3.4(1) and 1006.3.4(2). Group R-3 and R-4 occupancies. <p><i>Basements</i> and sleeping rooms below the fourth <i>story above grade plane</i> shall have not fewer than one <i>emergency escape and rescue opening</i> in accordance with this section. Where <i>basements</i> contain one or more sleeping rooms, an <i>emergency escape and rescue opening</i> shall be required in each sleeping room, but shall not be required in adjoining areas of the <i>basement</i>. Such openings shall open directly into a <i>public way</i>, or to a <i>yard</i>, or <i>court</i> that opens to a <i>public way</i>, <u>or to an egress balcony that leads to a public way.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Basements</i> with a ceiling height of less than 80 inches (2032 mm) shall not be required to have <i>emergency escape and rescue openings</i>. <i>Emergency escape and rescue openings</i> are not required from <i>basements</i> or sleeping rooms that have an <i>exit door</i> or <i>exit access door</i> that opens directly into a <i>public way</i> or to a <i>yard</i>, <i>court</i> or exterior egress balcony that opens that leads to a public way. <p>.....</p>		X			Clarification.
E114-21	<p>Revise as follows: 1103.2.11 Residential Group R-1 or R-3. Buildings of Group R-1 containing not more than five <i>sleeping units</i> for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter. <u>Buildings of Group R-3 congregate living facilities (transient) or boarding houses (transient) containing not more than five sleeping units for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter.</u></p> <p>1108.6.3 Group R-3. <u>Accessible units and Type B units shall be provided in Group R-3 occupancies in accordance with Sections</u></p>		X			Clarification.

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Sub Code:						
	<p>1108.6.3.1 and 1108.6.3.2. In Group R-3 occupancies where there are four or more dwelling units or sleeping units intended to be occupied as a residence in a single structure, every dwelling unit and sleeping unit intended to be occupied as a residence shall be a Type B unit. Bedrooms within congregate living facilities, dormitories, sororities, fraternities, and boarding houses shall be counted as sleeping units for the purpose of determining the number of units.</p> <p>Exception: The number of Type B units is permitted to be reduced in accordance with Section 1108.7.</p> <p>Add new text as follows:</p> <p>1108.6.3.1 Accessible units. <u>In Group R-3 congregate living facilities (transient) or boarding houses (transient) Accessible sleeping units shall be provided in accordance with Table 1107.6.1.1.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>The residence of a proprietor is not required to be an Accessible unit or to be counted towards the total number of units.</u> <u>Facilities as described in Section 1103.2.11 are not required to provide Accessible units.</u> <p>1108.6.3.2 Type B units. <u>In structures with four or more sleeping units intended to be occupied as a residence, every sleeping unit intended to be occupied as a residence shall be a Type B unit.</u></p> <p>Exception: <u>The number of Type B units is permitted to be reduced in accordance with Section 1108.7.</u></p>					
E115-21	<p>Revise as follows:</p> <p>1104.5 Location. <u>Accessible routes shall comply with all of the following:</u></p> <ol style="list-style-type: none"> <u>Accessible routes shall coincide with or be located in the same area as a general circulation path.</u> <u>Where the general circulation path is interior to the building, the accessible route shall also be interior to the building.</u> <u>Where only one accessible route is provided, the accessible route shall not pass through kitchens, storage rooms, restrooms, closets or similar spaces.</u> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Accessible routes from parking garages contained within and serving Type B units are not required to be interior.</u> 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	2. A single <i>accessible route</i> is permitted to pass through a kitchen or storage room in an <i>Accessible unit, Type A unit</i> or <i>Type B unit</i> .					
E116-21	<p>Revise as follows:</p> <p>1105.1.1 Automatic Power-operated doors at public entrances. In facilities with the occupancies and building <i>occupant loads greater than</i> indicated in Table 1105.1.1, <u>each public entrances that are required to be accessible shall have a minimum of one door be either a full power-operated door or a low-energy power-operated door. Where the accessible public entrance includes doors in series, such as a vestibule, at least a minimum of one door into and one door out of the vestibule set of two doors in series shall meet the requirements of this section.</u></p>		X			Clarification.
E118-21	<p>Revise as follows:</p> <p>1105.1.1 Automatic doors. In facilities with the occupancies and building <i>occupant loads</i> indicated in Table 1105.1.1, <i>public entrances</i> that are required to be <i>accessible</i> shall have one door be either a full <i>power-operated door</i> or a <i>low-energy power-operated door</i>. Where the <i>public entrance</i> includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section.</p> <p>Exception: For the purpose of determining <i>power-operated door</i> requirements, a tenant space with its own exterior <i>public entrance</i> shall be considered a separate facility and building.</p>	X			Power-operated doors may be required at fewer locations.	Added design options.
E119-21	<p>Revise as follows:</p> <p>1105.1.1 Automatic doors. In facilities with the occupancies and building <i>occupant loads</i> indicated in Table 1105.1.1, <i>public entrances</i> that are required to be <i>accessible</i> shall have one door be either a full <i>power-operated door</i> or a <i>low-energy power-operated door</i>. Where the <i>public entrance</i> includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section.</p> <p>Exception: In mixed-use facilities, where the total building <u>occupant load for the occupancies listed in the table is calculated as the sum of the ratios of the actual occupant load of each occupancy divided by the building occupant load threshold of each occupancy in Table 1105.1.1, and the sum of the ratios does not exceed</u> is less than 1, the requirements of Section 1105.1.1 do not apply. Where the sum of the ratios is</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE						
		Decrease	Neutral	Increase								
Sub Code:												
	<p>equal to 1 or greater, the requirements of Section 1105.1.1 are applicable.</p> <p>TABLE 1105.1.1 PUBLIC ENTRANCE WITH POWER-OPERATED DOOR^a</p> <table border="1"> <thead> <tr> <th>OCCUPANCY</th> <th>BUILDING OCCUPANT LOAD GREATER THAN</th> </tr> </thead> <tbody> <tr> <td>A-1, A-2, A-3, A-4</td> <td>300</td> </tr> <tr> <td>B, M, R-1</td> <td>500</td> </tr> </tbody> </table> <p>a. In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.</p>	OCCUPANCY	BUILDING OCCUPANT LOAD GREATER THAN	A-1, A-2, A-3, A-4	300	B, M, R-1	500					
OCCUPANCY	BUILDING OCCUPANT LOAD GREATER THAN											
A-1, A-2, A-3, A-4	300											
B, M, R-1	500											
E121-21	<p>Revise as follows:</p> <p>1106.3 Groups I-1, R-1, R-2, R-3 and R-4. Accessible parking spaces shall be provided in Group I-1, R-1, R-2, R-3 and R-4 occupancies in accordance with <u>the greatest number of parking spaces of any of the following: Items 1 through 4 as applicable.</u></p> <p>1. In Group R-2, R-3 and R-4 occupancies that are required to have Accessible, Type A or <i>Type B dwelling units or sleeping units</i>, at least 2 percent, but not less than one, of each type of parking space provided shall be accessible.</p> <p>2. In Group I-1 and R-1 occupancies, accessible parking shall be provided in accordance with Table 1106.2.</p> <p>2.3.Where at least one parking space is provided for each <i>dwelling unit or sleeping unit</i>, at least one <i>accessible</i> parking space shall be provided for each <i>Accessible</i> and <i>Type A unit</i>.</p> <p>3. Where parking is provided within or beneath a building, accessible parking spaces shall be provided within or beneath the building.</p> <p>Add new text as follows:</p> <p>1106.3.1 1106.7.1 Parking located beneath a building. Where parking is provided within or beneath a building, accessible parking spaces shall be provided within or beneath the building.</p>		X		Clarification.							
E124-21	<p>Revise as follows:</p> <p>1107.2 Electrical vehicle charging stations. Electrical vehicle charging stations shall comply with Sections 1107.2.1 and 1107.2.2.</p> <p>Exception: Electrical vehicle charging stations provided to serve Group R-2, R-3 and R-4 occupancies are not required to comply with this section.</p>			X	Cost is the addition of van-accessible signage to 5% of the total number of EV Charge Stations							

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
E125-21	<p>Revise as follows: 1107.2 Electrical vehicle charging stations. Electrical vehicle charging stations shall comply with Sections 1107.2.1 and 1107.2.2.</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> 1. Electrical vehicle charging stations provided to serve Group R-2, R-3 and R-4 occupancies are not required to comply with this section. 2. <u>Electric vehicle charging stations used exclusively by buses, trucks, other delivery vehicles, law enforcement vehicles, and motor pools are not required to comply with this section.</u> 		X			Adds option.
E127-21	<p>Revise as follows: 1108.3 Accessible spaces. Rooms and spaces available to the general public or available for use by residents and serving Accessible units, <i>Type A units</i> or <i>Type B units</i> shall be <i>accessible</i>. <i>Accessible</i> spaces shall include, <u>but are not limited to</u>, toilet and bathing rooms, kitchen, living and dining areas and any exterior spaces, including patios, terraces and balconies.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <i>Stories</i> and <i>mezzanines</i> exempted by Section 1108.4. 2. Recreational facilities in accordance with Section 1111.2. 3. Exterior decks, patios or balconies that are part of <i>Type B units</i> and have impervious surfaces, and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the unit. 		X			Clarification.
E130-21	<p>Revise as follows: 1108.6.1.1 Accessible units. <i>Accessible dwelling units</i> and <i>sleeping units</i> shall be provided in accordance with Table 1108.6.1.1. On a multiple-building site, where structures contain more than 50 <i>dwelling units</i> or <i>sleeping units</i>, the number of <i>Accessible units</i> shall be determined per structure. On a multiple-building site, where structures contain 50 or fewer <i>dwelling units</i> or <i>sleeping units</i>, all <i>dwelling units</i> and <i>sleeping units</i> on a site shall be considered to determine the total number of <i>Accessible units</i>. <i>Accessible units</i> shall be dispersed among the various classes of units.</p> <p>TABLE 1108.6.1.1 ACCESSIBLE DWELLING UNITS AND SLEEPING UNITS</p>		X			Increase design options.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																															
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Sub Code:																																																					
	<table border="1"> <thead> <tr> <th>TOTAL NUMBER OF UNITS PROVIDED</th> <th>MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITHOUT ROLL-IN SHOWERS</th> <th>MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITH ROLL-IN SHOWERS</th> <th>TOTAL NUMBER OF REQUIRED ACCESSIBLE UNITS</th> </tr> </thead> <tbody> <tr><td>1 to 25</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>26 to 50</td><td>2</td><td>0</td><td>2</td></tr> <tr><td>51 to 75</td><td>3</td><td>1</td><td>4</td></tr> <tr><td>76 to 100</td><td>4</td><td>1</td><td>5</td></tr> <tr><td>101 to 150</td><td>5</td><td>2</td><td>7</td></tr> <tr><td>151 to 200</td><td>6</td><td>2</td><td>8</td></tr> <tr><td>201 to 300</td><td>7</td><td>3</td><td>10</td></tr> <tr><td>301 to 400</td><td>8</td><td>4</td><td>12</td></tr> <tr><td>401 to 500</td><td>9</td><td>4</td><td>13</td></tr> <tr><td>501 to 1,000</td><td>2% of total</td><td>1% of total</td><td>3% of total</td></tr> <tr><td>Over 1,000</td><td>20, plus 1 for each 100, or fraction thereof, over 1,000</td><td>10 plus 1 for each 100, or fraction thereof, over 1,000</td><td>30 plus 2 for each 100, or fraction thereof, over 1,000</td></tr> </tbody> </table>	TOTAL NUMBER OF UNITS PROVIDED	MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITHOUT ROLL-IN SHOWERS	MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITH ROLL-IN SHOWERS	TOTAL NUMBER OF REQUIRED ACCESSIBLE UNITS	1 to 25	1	0	1	26 to 50	2	0	2	51 to 75	3	1	4	76 to 100	4	1	5	101 to 150	5	2	7	151 to 200	6	2	8	201 to 300	7	3	10	301 to 400	8	4	12	401 to 500	9	4	13	501 to 1,000	2% of total	1% of total	3% of total	Over 1,000	20, plus 1 for each 100, or fraction thereof, over 1,000	10 plus 1 for each 100, or fraction thereof, over 1,000	30 plus 2 for each 100, or fraction thereof, over 1,000				
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E131-21	<p>Revise as follows:</p> <p>1108.6.1.1 Accessible units. <i>Accessible dwelling units and sleeping units shall be provided in accordance with Table 1108.6.1.1. On a multiple-building site, where structures contain more than 50 dwelling units or sleeping units, the number of Accessible units shall be determined per structure. On a multiple-building site, where structures contain 50 or fewer dwelling units or sleeping units, all dwelling units and sleeping units on a site shall be considered to determine the total number of Accessible units. Accessible units shall be dispersed among the various classes of units.</i></p> <p>Exceptions.</p> <ol style="list-style-type: none"> Where all dwelling units and sleeping units contain showers and none contain bath tubs, the total number of required Accessible units specified by Table 1108.6.1.1 shall be permitted to provide standard or alternate roll-in type showers with seats. Where Exception 1 to Section 1108.6.1.1 is applicable, transfer showers shall be permitted to be substituted for all but the minimum required number of roll-in showers. 		X			Increase design options.																																															
E133-21	<p>Revise as follows:</p> <p>1108.6.2.2.1 Type A units. <i>In Group R-2 occupancies containing more than 20 dwelling units or sleeping units, at least 2 percent but not less than one of the units shall be a Type A unit. All Group R-2 units on a site shall be considered to determine the total number of units and the required number of Type A units. Type A units shall be dispersed among the various classes of units. Where two or more Type A units are provided, at least 5 percent but not less than one Type A unit, shall include a bathroom with a shower complying with ICC A117.1 for Type A units.</i></p> <p>Exceptions:</p> <ol style="list-style-type: none"> The number of Type A units is permitted to be reduced in accordance with Section 1108.7. 		X			Increase design options.																																															

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	2. Existing structures on a site shall not contribute to the total number of units on a site.					
E134-21	<p>Revise as follows:</p> <p>1108.7 General exceptions. Where specifically permitted by Section 1108.5 or 1108.6, the required number of <i>Type A units</i> and <i>Type B units</i> is permitted to be reduced in accordance with Sections 1108.7.1 through Section 1108.7.5 and the required number of Type B units is permitted to be reduced in accordance with Sections 1108.7.1 through 1108.7.5.</p> <p>1108.7.1 Structures without elevator service. Where elevator service is not provided in a structure, only the <i>dwelling units</i> and <i>sleeping units</i> that are located on stories indicated in Sections 1108.7.1.1 and 1108.7.1.2 are required to be <i>Type A units</i> and <i>Type B units</i>, respectively. The number of <i>Type A units</i> shall be determined in accordance with Section 1108.6.2.2.1.</p>		X			Clarification.
E136-21	<p>Revise as follows:</p> <p>1109.2 Assembly area seating. A building, room or space used for assembly purposes with spectator seating with <i>fixed seating</i>, <i>bleachers</i>, <i>grandstands</i> or <i>folding and telescopic seating</i> shall comply with Sections 1109.2.1 through 1109.2.5. Lawn seating shall comply with Section 1109.2.6. Assistive listening systems shall comply with Section 1109.2.7. Performance areas viewed from assembly seating areas shall comply with Section 1109.2.8. Dining areas shall comply with Section 1109.2.9.</p> <p>1109.2.2 Wheelchair spaces. In rooms and spaces used for assembly purposes with fixed seating, accessible <i>Accessible wheelchair spaces</i> shall be provided in accordance with Sections 1109.2.2.1 through 1109.2.2.3.</p>		X			Clarification.
E138-21	<p>Modify as follows:</p> <p>1110.12 Seating and standing spaces at dining surfaces tables, counters and work surfaces. . Where seating or standing space is provided at fixed or built in tables, counters dining surfaces or work surfaces is provided in accessible spaces, at least 5 percent of the such seating and standing spaces, but not less than one, shall be <i>accessible</i> and shall comply with Sections 1110.12.1 through 1110.12.3.</p> <p>Exception: Check writing surfaces at check out aisles not required to comply with Section 1110.13.1 are not required to be accessible.</p>			X	Minimal.	Increased compliance with ADA

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>1110.12.1 Dining Surfaces . At least 5 percent of the seating and standing space provided at fixed, built-in, and moveable dining surfaces shall be accessible.</p> <p>1110.12.2 Work Surfaces . At least 5 percent of the seating and standing spaces at fixed or built-in work surfaces shall be accessible.</p> <p>Exception: Check-writing surfaces at check-out aisles not required to comply with Section 1110.14.1 are not required to be accessible.</p> <p>1110.12.1 1110.12.3 Dispersion. Accessible fixed or built-in seating and standing spaces at tables, counters or dining and work surfaces shall be distributed throughout the space or facility containing such elements and shall be located on a level accessed by an accessible route.</p> <p>1110.12.2 1110.13 Visiting areas. Visiting areas in judicial facilities and Group I-3 shall comply with Sections 1110.12.2.1 1110.13.1 and 1110.12.2.2 1110.13.2.</p> <p>1110.12.2.1 1110.13.1 Cubicles and counters. At least 5 percent, but not less than one of the cubicles, shall be accessible on both the visitor and detainee sides. Where counters are provided, at least one shall be accessible on both the visitor and detainee sides.</p> <p>Exception: This requirement shall not apply to the detainee side of cubicles or counters at noncontact visiting areas not serving Accessible unit holding cells.</p> <p>1110.12.2.2 1110.13.2 Partitions. Where solid partitions or security glazing separate visitors from detainees, at least one of each type of cubicle or counter partition shall be accessible.</p>					
E139-21	<p>1110.2 Toilet and bathing facilities. Each toilet room and bathing room shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. Except as provided for in Sections 1110.2.4 and 1110.2.5, at least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be accessible.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Toilet rooms or bathing rooms accessed only through a private office, not for common or public use and intended 			X	Where an Accessible or Type A unit is required by the code, but not required to comply with Federal laws.	Clarification.

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	<p>for use by a single occupant, shall be permitted to comply with the specific exceptions in ICC A117.1.</p> <p>2. This section is not applicable to toilet and bathing rooms that serve <u>located within dwelling units or sleeping units</u> that are not required to be <i>accessible</i> by Section 1108. provided that such toilet or bathing rooms are not for public use.</p> <p>.....</p>					
E141-21	<p>1110.2.1.2 Family or assisted-use toilet rooms. Family or assisted-use toilet rooms shall include only one water closet and only one lavatory. A family or assisted-use bathing room in accordance with Section 1110.2.1.3 shall be considered to be a family or assisted-use toilet room.</p> <p>Exception: The following additional <u>plumbing</u> fixtures shall be permitted in a family or assisted-use toilet room:</p> <ol style="list-style-type: none"> 1. A urinal. 2. A child-height water closet. 3. A child-height lavatory. 4. An adult changing station also used for bathing. 		X			Allows voluntary installation of adult changing tables in toilet rooms.
E142-21	<p>Add new text as follows:</p> <p>1110.3 Adult Changing Stations. <u>Where required, adult changing stations shall be accessible and shall comply with Sections 1110.3.1 through 1110.3.4.</u></p> <p>1110.3.1 Where required. <u>At least one adult changing station shall be provided in all the building in the occupancies listed below following locations:</u></p> <ol style="list-style-type: none"> 1. <u>In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required by to comply with Section 1110.2.1.</u> 2. <u>In a college or university business occupancy, where an aggregate of twelve or more male and female water closets or urinals are provided on any floor in a building. In Group B occupancies providing educational facilities for students above the 12th grade, where an aggregate of twelve of more male and female water closets are required to serve the classrooms and lecture halls.</u> 3. <u>In an elementary or high school educational occupancy with an assembly use, where an aggregate of six or more male and female water closets is required for that assembly use. In Group E occupancies, where a room or space used for</u> 			X	Increase by Cost of Changing Table and increase in room size.	Design standards for changing tables.

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	<p><u>assembly purposes requires an aggregate of six or more male and female water closets for that room or space.</u></p> <p>4. <u>In highway rest stops and highway service plazas.</u></p> <p>1110.3.2 Room. <u>Adult changing stations shall be located in rooms open to the public that include only one water closet and only one lavatory. Fixtures located in such rooms shall be included in determining the number of fixtures provided in an occupancy. The occupants shall have access to the required adult changing station at all times that the associated occupancy is occupied.</u></p> <p><u>Exception: Adult changing stations shall be permitted to be located in family or assisted toilet rooms required in Section 1110.2.1.</u></p> <p>1110.3.3 Prohibited location. <u>The required accessible routes to adult changing stations shall not pass through security checkpoints. The accessible route from separate-sex toilet or bathing rooms to an accessible adult changing station shall not require travel through security checkpoints.</u></p> <p>1110.3.4 Travel distance. <u>Where buildings are required to have an adult changing station in accordance with Section 1110.3.1, The adult changing stations shall be located on an accessible route such that a person is no more than one story two stories above or below the story with the adult changing station and the path of travel to such facility shall not exceed 2000 feet.</u></p>					
E143-21	<p>Revise as follows:</p> <p>1110.3 Sinks. Where sinks are provided, at least 5 percent but not less than one provided in accessible spaces shall be <i>accessible</i>.</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> Mop or service sinks are not required to be accessible. For other than sinks in kitchens and kitchenette, where a <u>sink requires a deep basin to perform its intended purpose or requires a specialized drain that cannot be located outside of the knee space, a parallel approach shall be permitted to be located adjacent to the sink.</u> <p>1110.4 Kitchens and kitchenettes. Where kitchens and kitchenettes are provided in accessible spaces or rooms, they shall be <i>accessible</i>.</p> <p>Exception: Kitchen and Kitchenette sinks shall be permitted to comply with Section 1110.3.</p>		X			Clarification.
E144-21	<p>Revise as follows:</p>	X			Reduces	Clarification.

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	<p>1111.4.14 Swimming pools, wading pools, cold baths, hot tubs and spas. <i>Swimming pools, wading pools, cold baths, hot tubs and spas shall be <i>accessible</i> and be on an accessible route.</i></p> <p>Exceptions:</p> <ol style="list-style-type: none"> Catch pools <u>A catch pool</u> or a designated section of a pool used as a terminus for a water slide flume shall not be required to provide an <i>accessible</i> means of entry, provided that a portion of the catch pool edge is on an <i>accessible route</i> or, where the catch pool edge is located on a raised platform <u>restricted to use by staff and persons exiting the pool, an accessible route serves the gate or area where participants discharge from the activity.</u> Where spas, cold baths or hot tubs are provided in a cluster, at least 5 percent, but not less than one of each type of spa, cold bath or hot tub in each cluster, shall be <i>accessible</i> and be on an <i>accessible route</i>. <i>Swimming pools, wading pools, spas, cold baths and hot tubs</i> that are required to be <i>accessible</i> by Sections 1111.2.2 and 1111.2.3 are not required to provide <i>accessible</i> means of entry into the water. 				construction cost where catch pools are located above ground.	
E145-21	<p>Revise as follows:</p> <p>E107.2 1112.6 Designations. <u>Where provided, interior and exterior signs identifying permanent rooms and spaces shall be visual characters, raised characters and braille complying with ICC A117.1. Where pictograms are provided as designations of interior rooms and spaces, the pictograms shall have visual characters, raised characters and braille complying with ICC A117.1.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> Exterior signs that are not located at the door to the space they serve are not required to comply. Building directories, menus, seat and row designations in assembly areas, occupant names, building addresses and company names and logos are not required to comply. Signs in parking facilities are not required to comply. Temporary (seven days or less) signs are not required to comply. 		X			Editorial.

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		Sub Code:				
	5. In detention and correctional facilities, signs not located in public areas are not required to comply.					
E147-21	<p>Revise as follows: E104.2.1 Transient lodging. In <i>transient lodging</i> facilities, dwelling units or <i>sleeping units</i> with accessible communication features shall be provided in accordance with Table E104.2.1. Units required to comply with Table E104.2.1 with accessible communication features shall be dispersed among the various classes of units. <u>At least one Accessible unit required by Section 1108.6.1.1 shall also provide accessible communication features.</u> <u>Not more than 10 percent of Accessible units required by Section 1108.6.1.1 shall be used to satisfy the minimum number of units required to provide accessible communication features.</u></p>		X			Clarification.
E148-21	<p>Revise as follows: E105.2 1110.8 Laundry equipment. Where provided in spaces required to be <i>accessible</i>, washing machines and clothes dryers shall comply with this section. E105.2.1 1110.8.1 Washing machines. Where three or fewer washing machines are provided, one or more shall be <i>accessible</i>. Where more than three washing machines are provided, two or more shall be <i>accessible</i>. E105.2.2 1110.8.2 Clothes dryers. Where three or fewer clothes dryers are provided, one or more shall be <i>accessible</i>. Where more than three clothes dryers are provided, two or more shall be <i>accessible</i>.</p>		X			Editorial.
E149-21	<p>Revise as follows: 1109.2.7.3 Public address systems. Where stadiums, arenas and <i>grandstands</i> have 15,000 fixed seats or more and provide audible public announcements, they shall also provide prerecorded or real-time captions of those audible public announcements, <u>either prerecorded or real time.</u></p>		X			Clarification.
FS1-22	<p>Revise as follows: 1401.1 Scope. The provisions of this chapter shall establish the minimum requirements for <i>exterior walls</i>; <i>exterior wall coverings</i>; <i>exterior wall openings</i>; exterior windows and doors; <i>exterior soffits and fascias</i>; and architectural <i>trim</i>. [BS] 1402.3 Structural Wind resistance. <i>Exterior walls, exterior wall coverings, exterior soffits, fascias,</i> and the associated openings, shall be designed and constructed to resist safely the superimposed <i>loads</i> required by Chapter 16.</p>		X			Clarification on the required wind loads and material specifications for soffits.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>Add new text as follows: 1404.1.1 Soffits and fascias. Soffits and fascias installed as part of roof overhangs shall comply with Section 1410.</p> <p align="center">SECTION 1410 SOFFITS AND FASCIAS AT ROOF OVERHANGS</p> <p>1410.1 General. Soffits and fascias at roof overhangs shall be designed and constructed in accordance with the applicable provisions of this section.</p> <p>1410.2 General wind requirements. Soffits and fascias shall be capable of resisting designed to resist the component and cladding loads for walls determined in accordance with Chapter 16 using an effective wind area of 10 square feet (0.93 m²).</p> <p>Modify as follows: 1410.3 Vinyl and aluminum soffit panels. Vinyl and aluminum soffit panels shall comply with Section 1410.2 and shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component in accordance with Figure 1410.3.1(1). Where the unsupported span of soffit panels is greater than 12 inches (406 mm) where the design wind pressure is greater than 30 psf or greater than 16 inches where the wind pressure is 30 psf or less, intermediate nailing strips shall be provided in accordance with Figure 1410.3.1(2). Vinyl and aluminum soffit panels shall be installed in accordance with the manufacturer’s installation instructions. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire.</p> <p>1410.4 Fiber-cement soffit panels. Fiber-cement soffit panels shall comply with Section 1410.2 and shall be a minimum of 1/4 inch (6.4 mm) in thickness and comply with the requirements of ASTM C1186, Type A, minimum Grade II, or ISO 8336, Category A, minimum Class 2. Panel joints shall occur over framing or over wood structural panel sheathing. Soffit panels shall be installed with spans and fasteners in accordance with the manufacturer’s installation instructions. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or</p>				-	

Table 6. 2024 IBC Changes Cost Impact

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	<p>staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire.</p> <p>1410.5 Hardboard soffit panels. Hardboard soffit panels shall comply with Section 1410.2 and shall be not less than 7/16 inch (11.11 mm) in thickness and fastened to framing or nailing strips to meet the required design wind pressures. Where the design wind pressure is <u>30pounds per square foot (1.44 kPa)</u> and less, hardboard soffit panels are permitted to be attached to wood framing with 2 1/2-inch by 0.113-inch (64 mm by 2.9 mm) siding nails spaced not more than 6 inches (152 mm) on center at panel edges and 12 inches (305 mm) on center at intermediate supports. <u>Soffit panels shall be installed with spans and fasteners in accordance with the manufacturer’s installation instructions.</u> Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire.</p> <p>1410.6 Wood structural panel soffit. Wood structural panel soffits shall comply with Section 1410.2 and shall have minimum panel performance category of 3/8. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire. Alternatively, w <u>Wood structural panel soffits are permitted to be attached to wood framing in accordance with Table 1410.6.</u></p> <p>1410.7 Aluminum Fascia. Aluminum fascia shall comply with Section 1410.2 and shall be a minimum of 0.019 inches and installed in accordance with manufacturer’s installation instructions. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or other approved</p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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		Sub Code:				
	corrosion-resistant fasteners. Aluminum fascia shall be attached to wood frame construction in accordance with Section 1410.7.1 or 1410.7.2.					
FS2-22	<p>Modify as follows:</p> <p>[BF] EXTERIOR WALL COVERING. A material or assembly of materials applied on the exterior side of <i>exterior walls</i> for the purpose of providing a weather-resisting barrier, insulation or for aesthetics, including but not limited to, <i>veneers, siding, exterior insulation and finish systems, rainscreen systems,</i> architectural trim and embellishments such as <i>cornices, soffits, fascias, gutters</i> and leaders.</p> <p>[BS] 1402.3 Structural. <i>Exterior walls,</i> and the associated openings, shall be designed and constructed to resist safely the superimposed <i>loads</i> required by Chapter 16.</p> <p>[BS] 1402.3.1 Veneer attachment. <i>Veneers</i> shall be attached as specified in Section 1404. For <i>veneers</i> not specified in Section 1404, attachments and associated support systems shall be designed as specified in Chapter 16 and installed in accordance with manufacturer's instructions.</p> <p>1403.14 1402.3.1 Attachments through exterior insulation. <u>Where exterior wall coverings are attached to the building structure through exterior continuous insulation, furring and attachments through the exterior insulation shall be designed to resist design loads determined in accordance with Chapter 16, including support of cladding weight as applicable. Exterior wall coverings attached to the building structure through foam plastic insulating sheathing shall comply with the attachment requirements of Section 2603.11, 2603.12, or 2603.13.</u></p>		X			Clarification.
FS3-22	<p>Revise as follows:</p> <p>[BS] 1404.6 Anchored masonry veneer. <i>Anchored masonry veneer</i> shall comply with the provisions of Sections 1404.6 through 1404.9 and Sections 12.113.1 and 12.213.2 of TMS 402.</p> <p>[BS] 1404.6.1 Tolerances. <i>Anchored masonry veneers</i> in accordance with Chapter 14 are not required to meet the tolerances in Article 3.3G.1 of TMS 602.</p> <p>Delete without substitution:</p> <p>[BS] 1404.6.2 Seismic requirements. <i>Anchored masonry veneer</i> located in <i>Seismic Design Category C, D, E or F</i> shall conform to the requirements of Section 12.2.2.11 of TMS 402.</p>		X			Editorial.

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	<p>Revise as follows: [BS] 1404.10 Adhered masonry veneer. <i>Adhered masonry veneer</i> shall comply with the applicable requirements in this section and Sections 12.113.1 and 12.313.2 of TMS 402.</p>					
FS4-22	<p>Revise as follows: [BS] 1404.14 Vinyl siding and Insulated Vinyl Siding. <i>Vinyl siding and insulated vinyl siding</i> conforming to the requirements of this section and complying with ASTM D3679 and ASTM D7793, respectively, shall be permitted on <i>exterior walls</i> where the design wind pressure determined in accordance with Section 1609 does not exceed 30 pounds per square foot (1.44 kN/m²). Where the design wind pressure exceeds 30 pounds per square foot (1.44 kN/m²), tests or calculations indicating compliance with Chapter 16 shall be submitted. Vinyl siding and insulated vinyl siding shall be secured to the building so as to provide weather protection for the <i>exterior walls</i> of the building.</p>		X			Adds installation requirements.
FS5-22	<p>[BS] 1404.14 Vinyl siding. Vinyl siding conforming to the requirements of this section and complying with ASTM D3679 shall be permitted on <i>exterior walls</i> where the design wind pressure determined in accordance with Section 1609 does not exceed 30 pounds per square foot (1.44 kN/m²). Where the design wind pressure exceeds 30 pounds per square foot (1.44 kN/m²), tests or calculations indicating compliance with Chapter 16 shall be submitted. Vinyl siding shall be secured to the building so as to provide weather protection for the <i>exterior walls</i> of the building.</p>		X			Editorial.
FS7-22	<p>1404.14.2 Installation over foam plastic insulating sheathing. Where vinyl siding or insulated vinyl siding is installed over foam plastic insulating sheathing, the vinyl siding shall comply with Section 1404.14 and shall have a wind load design pressure rating in accordance with Table 1404.14.2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where the foam plastic insulating sheathing is applied directly over wood structural panels, fiberboard, gypsum sheathing or other approved backing capable of independently resisting the design wind pressure, the vinyl siding shall be installed in accordance with Section 1404.14.1. Where the vinyl siding manufacturer's product specifications provide an approved wind load design 		X			Editorial coordination with IRC for vinyl siding installation.

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	<p><u>pressure rating for installation over foam plastic insulating sheathing, use of this wind load design pressure rating shall be permitted and the siding shall be installed in accordance with the manufacturer's installation instructions.</u></p> <p>3. <u>Where the foam plastic insulating sheathing and its attachment has a design wind pressure resistance complying with Sections 2603.10 and 1609, the vinyl siding shall be installed in accordance with Section 1404.14.1.</u></p> <p>TABLE 1404.14.2 REQUIRED MINIMUM WIND LOAD DESIGN PRESSURE RATING FOR VINYL SIDING INSTALLED OVER FOAM PLASTIC SHEATHING ALONE</p> <table border="1"> <thead> <tr> <th rowspan="3">ULTIMATE DESIGN WIND SPEED (MPH)</th> <th colspan="6">ADJUSTED MINIMUM DESIGN WIND PRESSURE (ASD) (PSF)^{a, b}</th> </tr> <tr> <th colspan="3">Case 1: With interior gypsum wallboard^c</th> <th colspan="3">Case 2: Without interior gypsum wallboard^c</th> </tr> <tr> <th colspan="3">Exposure</th> <th colspan="3">Exposure</th> </tr> <tr> <th></th> <th>B</th> <th>C</th> <th>D</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>≤ 95</td> <td>-30.0</td> <td>-33.2</td> <td>-39.4</td> <td>-33.9</td> <td>-47.4</td> <td>-56.2</td> </tr> <tr> <td>100</td> <td>-30.0</td> <td>-36.8</td> <td>-43.6</td> <td>-37.2</td> <td>-52.5</td> <td>-62.2</td> </tr> <tr> <td>105</td> <td>-30.0</td> <td>-40.5</td> <td>-48.1</td> <td>-41.4</td> <td>-57.9</td> <td>-68.6</td> </tr> <tr> <td>110</td> <td>-31.8</td> <td>-44.5</td> <td>-52.8</td> <td>-45.4</td> <td>-63.5</td> <td>-75.3</td> </tr> <tr> <td>115</td> <td>-35.5</td> <td>-49.7</td> <td>-59.0</td> <td>-50.7</td> <td>-71.0</td> <td>-84.2</td> </tr> <tr> <td>120</td> <td>-37.4</td> <td>-52.4</td> <td>-62.1</td> <td>-53.4</td> <td>-74.8</td> <td>-88.6</td> </tr> <tr> <td>130</td> <td>-44.9</td> <td>-62.8</td> <td>-74.5</td> <td>-64.1</td> <td>-89.7</td> <td>-106</td> </tr> <tr> <td>≥ 130</td> <td align="center" colspan="6">See Note d</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 mile per hour = 0.447 m/s, 1 pound per square foot = 0.0479 kPa.</p> <p>a. <u>Linear interpolation is permitted.</u></p> <p>b. <u>The table values are based on a maximum 30-foot mean roof height, and effective wind area of 10 square feet Wall Zone 5 (corner), and the ASD design component and cladding wind pressure determined in accordance with Section 1609 multiplied by the following adjustment factors: 1.87 (Case 1) and 2.67 (Case 2).</u></p> <p>c. <u>Gypsum wallboard, gypsum panel product or equivalent.</u></p> <p>d. <u>For the indicated wind speed condition and where foam sheathing is the only sheathing on the exterior of a frame wall with vinyl siding, the wall assembly shall be capable of resisting an impact without puncture at least equivalent to that of a wood frame wall with minimum 7/16 -inch OSB sheathing as tested in accordance with ASTM E1886. The vinyl siding shall comply with an adjusted design wind pressure requirement in accordance with Note b, using an adjustment factor of 2.67.</u></p>	ULTIMATE DESIGN WIND SPEED (MPH)	ADJUSTED MINIMUM DESIGN WIND PRESSURE (ASD) (PSF) ^{a, b}						Case 1: With interior gypsum wallboard ^c			Case 2: Without interior gypsum wallboard ^c			Exposure			Exposure				B	C	D	B	C	D	≤ 95	-30.0	-33.2	-39.4	-33.9	-47.4	-56.2	100	-30.0	-36.8	-43.6	-37.2	-52.5	-62.2	105	-30.0	-40.5	-48.1	-41.4	-57.9	-68.6	110	-31.8	-44.5	-52.8	-45.4	-63.5	-75.3	115	-35.5	-49.7	-59.0	-50.7	-71.0	-84.2	120	-37.4	-52.4	-62.1	-53.4	-74.8	-88.6	130	-44.9	-62.8	-74.5	-64.1	-89.7	-106	≥ 130	See Note d										
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FS8-21	Revise as follows:		X			Editorial.																																																																																		

Table 6. 2024 IBC Changes Cost Impact

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	<p>704.1 Requirements. The <i>fire-resistance ratings</i> of structural members and assemblies shall comply with this section and the requirements for the type of construction as specified in Table 601. The <i>fire-resistance ratings</i> shall be not less than the ratings required for the fire- resistance-rated assemblies supported by the structural members.</p> <p>Exception: <i>Fire barriers, fire partitions, smoke barriers and horizontal assemblies</i> as provided in Sections 707.5, 708.4, 709.4 and 711.2, respectively.</p> <p>Add new text as follows:</p> <p>704.1.1 Supporting construction. <u>The <i>fire-resistance ratings</i> of supporting structural members and assemblies shall be not less than the ratings required for the fire-resistance-rated assemblies supported by the structural members.</u></p> <p>Exception: <u>Structural members and assemblies that support fire barriers, fire partitions, smoke barriers and horizontal assemblies as provided in Sections 707.5, 708.4, 709.4 and 711.2, respectively.</u></p>					
FS8-22	<p>Revise as follows:</p> <p>[BS] 1404.17 Fastening. Weather boarding and wall coverings shall be securely fastened with aluminum, copper, zinc, zinc-coated or other <i>approved</i> corrosion-resistant fasteners in accordance with the nailing schedule in Table 2304.10.2 or the <i>approved</i> manufacturer’s instructions. Shingles and other weather coverings shall be attached with appropriate standard-shingle nails to furring strips securely nailed to studs, or with <i>approved</i> mechanically bonding nails, except where sheathing is of wood not less than 1-inch (25 mm) nominal thickness or of <i>wood structural panels</i> as specified in Table 2308.6.3(3). <u>Fastening of claddings or furring through foam plastic insulating sheathing shall comply with Section 1404.17.1, 1404.17.2, or 1404.17.3 as applicable.</u></p> <p>[BS]—2603.11—1404.17.1 Cladding attachment over foam sheathing to masonry or concrete wall construction. Cladding shall be specified and installed in accordance with <u>this</u> Chapter 14 and the cladding manufacturer’s installation instructions or an approved design. Foam sheathing shall be attached to masonry or concrete construction in accordance with the insulation manufacturer’s installation instructions or an approved design. Furring and furring attachments through foam sheathing shall be</p>		X			Editorial changes.

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	<p>designed to resist design <i>loads</i> determined in accordance with Chapter 16, including support of cladding weight as applicable. Fasteners used to attach cladding or furring through foam sheathing to masonry or concrete substrates shall be approved for application into masonry or concrete material and shall be installed in accordance with the fastener manufacturer’s installation instructions.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where the cladding manufacturer has provided approved installation instructions for application over foam sheathing and connection to a masonry or concrete substrate, those requirements shall apply. For <i>exterior insulation and finish systems</i>, refer to Section 1407. For anchored masonry or stone <i>veneer</i> installed over foam sheathing, refer to Section 1404. <p>[BS] 2603.12 1404.17.2 Cladding attachment over foam sheathing to cold-formed steel framing. Cladding shall be specified and installed in accordance with <u>this</u> Chapter 14 and the cladding manufacturer’s approved installation instructions, including any limitations for use over foam plastic sheathing, or an approved design. Where used, furring and furring attachments shall be designed to resist design <i>loads</i> determined in accordance with Chapter 16. In addition, the cladding or furring attachments through foam sheathing to cold-formed steel framing shall meet or exceed the minimum fastening requirements of Sections 1404.17.2.1 2603.12.1 and 1404.17.2.2 2603.12.2, or an approved design for support of cladding weight.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where the cladding manufacturer has provided approved installation instructions for application over foam sheathing, those requirements shall apply. For <i>exterior insulation and finish systems</i>, refer to Section 1407. For anchored masonry or stone <i>veneer</i> installed over foam sheathing, refer to Section 1404. <p>[BS] 2603.12.1 1404.17.2.1 Direct attachment. Where cladding is installed directly over foam sheathing without the use of furring, cladding minimum fastening requirements to support</p>					

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	<p>the cladding weight shall be as specified in Table 2603.12.1 <u>1404.17.2.1</u>.</p> <p>TABLE 2603.12.1 <u>1404.17.2.1</u> CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a</p> <p>.....</p> <p>[BS] 2603.12.2 <u>1404.17.2.2</u> Furred cladding attachment. Where steel or wood furring is used to attach cladding over foam sheathing, furring minimum fastening requirements to support the cladding weight shall be as specified in Table 2603.12.2 <u>1404.17.2.2</u>. Where placed horizontally, wood furring shall be <i>preservative-treated wood</i> in accordance with Section 2303.1.9 or <i>naturally durable wood</i> and fasteners shall be corrosion resistant in accordance with Section 2304.10.6. Steel furring shall have a minimum G60 galvanized coating.</p> <p>TABLE 2603.12.2 <u>1404.17.2.2</u> FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a</p> <p>.....</p> <p>[BS] 2603.13 <u>1404.17.3</u> Cladding attachment over foam sheathing to wood framing. Cladding shall be specified and installed in accordance with <u>this</u> Chapter 14 and the cladding manufacturer’s installation instructions. Where used, furring and furring attachments shall be designed to resist design <i>loads</i> determined in accordance with Chapter 16. In addition, the cladding or furring attachments through foam sheathing to framing shall meet or exceed the minimum fastening requirements of Section 2603.13.1 <u>1404.17.3.1</u> or 2603.13.2 <u>1404.17.3.2</u>, or an approved design for support of cladding weight.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where the cladding manufacturer has provided approved installation instructions for application over foam sheathing, those requirements shall apply. 2. For <i>exterior insulation and finish systems</i>, refer to Section 1407. 3. For anchored masonry or stone <i>veneer</i> installed over foam sheathing, refer to Section 1404. <p>[BS] 2603.13.1 <u>1404.17.3.1</u> Direct attachment. Where cladding is installed directly over foam sheathing without the use of</p>					

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	<p>furring, minimum fastening requirements to support the cladding weight shall be as specified in Table 2603.13.1 1404.17.3.1.</p> <p>TABLE 2603.13.1 1404.17.3.1 CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a</p> <p>.....</p> <p>[BS] 2603.13.2 1404.17.3.2 Furred cladding attachment. Where wood furring is used to attach cladding over foam sheathing, furring minimum fastening requirements to support the cladding weight shall be as specified in Table 2603.13.2 1404.17.3.2. Where placed horizontally, wood furring shall be <i>preservative-treated wood</i> in accordance with Section 2303.1.9 or <i>naturally durable wood</i> and fasteners shall be corrosion resistant in accordance with Section 2304.10.6 .</p> <p>TABLE 2603.13.2 1404.17.3.2 FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b}</p> <p>.....</p>					
FS9-21	<p>Revise as follows:</p> <p>704.2 Column protection. Where columns are required to have protection to achieve a fire-resistance rating, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required fire-resistance rating. Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.</p> <p>Exception: Columns that meet the limitations of Section 704.4.1.</p> <p>704.2 704.3 Protection of the primary structural frame other than columns. Members of the primary structural frame other than columns that are required to have protection to achieve a fire-resistance rating and support more than two floors or one floor and roof, or support a load-bearing wall or a nonload-bearing wall more than two stories high, shall be provided individual encasement protection by protecting them on all sides for the full length, including connections to other structural members, with materials having the required fire-</p>		X			Clarification.

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		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>resistance rating.</u></p> <p>Exception Exceptions: Individual encasement protection on all sides shall be permitted on all exposed sides provided that the extent of protection is in accordance with the required fire-resistance rating, as determined in Section 703.</p> <p>1. Individual encasement protection is permitted to be interrupted where the primary structural member is in direct contact with another structural member.</p> <p>2. Primary structural members other than columns that do not support more than two floors or one floor and roof, or a load-bearing wall or a nonload-bearing wall more than two stories high, are permitted to be protected by the membrane of a fire-resistance rated wall or horizontal assembly where the membrane provides the required fire-resistance rating.</p> <p>3. Members that are integral elements in walls of light frame construction, including studs, columns, and boundary elements located entirely between the top and bottom plates or tracks, shall be permitted to be protected by the membrane of a fire-resistance rated wall assembly. Columns that meet the limitations of Section 704.3.1.</p> <p>704.4 704.3 Protection of secondary structural members. <u>Secondary structural members</u> that are required to have protection to achieve a <i>fire-resistance rating</i> shall be protected by individual encasement protection, or by the membrane of a fire-resistance rated wall or horizontal assembly, where the membrane provides the required fire-resistance rating or a combination of both.</p> <p>704.4.1 704.3.1 Light-frame construction. <u>Studs, columns and boundary elements that are integral elements in walls of light-frame construction and are located entirely between the top and bottom plates or tracks shall be permitted to have required fire-resistance ratings</u> provided by the membrane protection provided for the <i>wall</i>.</p> <p>704.4.2 Horizontal assemblies. <u>Horizontal assemblies</u> are permitted to be protected with a membrane or ceiling where the membrane or ceiling provides the required <i>fire-resistance rating</i> and is installed in accordance with Section 711.</p>					
FS9-22	[BS] 1404.5 Fastening. Weather boarding and <u>Exterior wall coverings</u> shall be securely fastened with aluminum, copper, zinc,		X			Editorial.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	zinc-coated or other <i>approved</i> corrosion-resistant fasteners in accordance with this code the nailing schedule in Table 2304.10.2 or the <i>approved</i> manufacturer’s instructions. Shingles and other weather coverings shall be attached with appropriate standard shingle nails to furring strips securely nailed to studs, or with approved mechanically bonding nails, except where sheathing is of wood not less than 1-inch (25 mm) nominal thickness or of wood structural panels as specified in Table 2308.6.3(3).					
FS11-21	<p>Revise as follows:</p> <p>704.6.1 Secondary attachments to structural members. Where primary and secondary structural steel members require fire protection, secondary tubular steel attachments to those structural members <u>any additional structural steel members having direct connection to the primary structural frame or secondary structural members</u> shall be protected with the same fire-resistive material and thickness as required for the structural member. The protection shall extend away from the structural member a distance of not less than 12 inches (305 mm), or shall be applied to the entire length where the attachment is less than 12 inches (305 mm) long. Where an attachment is hollow and the ends are open, the fire-resistive material and thickness shall be applied to both exterior and interior of the hollow steel attachment.</p>	X			Amount varies based on number of small attachments, presence of a hanging ceiling with metal grid and ceiling tiles, or other building service items such as ducts, cables and pipes, that may hang from fire-resistance-rated assembly	Safety increased.
FS11-22	<p>Revise as follows:</p> <p>[BS] 1404.18 Polypropylene siding. <i>Polypropylene siding</i> conforming to the requirements of this section and complying with Section 1403.12 shall be limited to <i>exterior walls</i> located in areas where the wind speed specified in Chapter 16 does not exceed 100 miles per hour (45 m/s) and the building height is less than or equal to 40 feet (12 192 mm) in Exposure C. Where construction is located in areas where the basic wind speed exceeds 100 miles per hour (45 m/s), or building heights are in excess of 40 feet (12 192 mm), tests or calculations indicating compliance with Chapter 16 shall be submitted. <i>Polypropylene siding</i> shall be installed in accordance with the manufacturer’s instructions. <i>Polypropylene siding</i> shall be secured to the building so as to provide weather protection for the <i>exterior walls</i> of the building.</p> <p>Add new text as follows:</p>		X			Brings in critical required installation practices for polypropylene siding.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>[BS] 1404.18.1 Installation. Unless otherwise specified in the approved manufacturer's instructions, Polypropylene siding and accessories shall be installed over and attached to wood structural panel sheathing with minimum thickness of 7/16 inch (11.1 mm), or other nailable substrate or other substrate suitable for mechanical fasteners in accordance with the approved manufacturer's instructions.</p> <p>[BS] 1404.18.1.1 Accessories. Accessories shall be installed in accordance with the approved manufacturer's instructions.</p> <p>[BS] 1404.18.1.1.1 Starter Strip. Horizontal siding shall be installed with a starter strip at the initial course at any location.</p> <p>[BS] 1404.18.1.1.2 Under Windows and Top of Walls. Where nail hem is removed such as under windows and at top of walls, nail slot punch or predrilled holes shall be constructed.</p> <p>[BS] 1404.18.2 Fastener requirements. Unless otherwise specified in the approved manufacturer's instructions, nails shall be corrosion resistant, with a minimum 0.120-inch (3 mm) shank and minimum 0.313-inch (8 mm) head diameter. Nails shall be a minimum of 1 1/4 inches (32 mm) long or as necessary to penetrate sheathing or nailable substrate not less than 3/4 inch (19.1 mm). Where the nail fully penetrates the sheathing or nailable substrate, the end of the fastener shall extend not less than 1/4 inch (6.4 mm) beyond the opposite face of the sheathing or nailable substrate. Spacing of fasteners shall be installed in accordance with the approved manufacturer's instructions.</p>					
FS12-21	<p>Revise as follows:</p> <p>705.2.3.1 Balconies and similar projections. Balconies and similar projections of combustible construction other than <i>fire-retardant-treated wood</i> shall be <i>fire-resistance</i> rated where required by Table 601 for floor construction or shall be of heavy timber construction in accordance with Section 2304.11. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> On buildings of Types I and II construction, three stories or less above <i>grade plane</i>, <i>fire-retardant-treated wood</i> shall be permitted for balconies, porches, decks and exterior stairways not used as required exits. 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>2. Untreated wood and plastic composites that comply with ASTM D7032 and Section 2612 are permitted for pickets, rails and similar <i>guard</i> components that are limited to 42 inches (1067 mm) in height.</p> <p>3. Balconies and similar projections on buildings of Types III, IV-<u>HT</u> and V construction shall be permitted to be of Type V construction and shall not be required to have a <i>fire-resistance rating</i> where sprinkler protection is extended to these areas.</p> <p>4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.</p>					
FS12-21	<p>Revise as follows:</p> <p>705.2.3.1 Balconies and similar projections. Balconies and similar projections of combustible construction other than <i>fire-retardant-treated wood</i> shall be <i>fire-resistance</i> rated where required by Table 601 for floor construction or shall be of heavy timber construction in accordance with Section 2304.11. The aggregate length of the projections shall not exceed 50 percent of the building’s perimeter on each floor.</p> <p>Exceptions:</p> <p>1.On buildings of Types I and II construction, three <i>stories</i> or less above <i>grade plane</i>, <i>fire-retardant-treated wood</i> shall be permitted for balconies, porches, decks and exterior <i>stairways</i> not used as required exits.</p> <p>2.Untreated wood and plastic composites that comply with ASTM D7032 and Section 2612 are permitted for pickets, rails and similar <i>guard</i> components that are limited to 42 inches (1067 mm) in height.</p> <p>3.Balconies and similar projections on buildings of Types III, IV-<u>HT</u> and V construction shall be permitted to be of Type V construction and shall not be required to have a <i>fire-resistance rating</i> where sprinkler protection is extended to these areas.</p> <p>4.Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.</p>		X		Clarification.	
FS12-22	<p>Revise as follows:</p>	X			Minimal.	Coordination.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>[BS] TABLE 2603.13.1 CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a Portions of table not shown remain unchanged. b. <u>The thickness of wood structural panels complying with the specific gravity requirement of Note a shall be permitted to be included in satisfying the minimum penetration into framing.</u> b.c. Nail fasteners shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths. e.d. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C587 or ASTM C1289.</p> <p>[BS] TABLE 2603.13.2 FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b} Portions of table not shown remain unchanged. c. <u>The thickness of wood structural panels complying with the specific gravity requirements of Note a shall be permitted to be included in satisfying the minimum required penetration into framing.</u> e.d. Where the required cladding fastener penetration into wood material exceeds³/₄ inch and is not more than 1¹/₂ inches, a minimum 2-inch nominal wood furring or an approved design shall be used. d.e. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C587 or ASTM C1289. e.f. Furring shall be spaced not greater than 24 inches on center in a vertical or horizontal orientation. In a vertical orientation, furring shall be located over wall studs and attached with the required fastener spacing. In a horizontal orientation, the indicated 8-inch and 12-inch fastener spacing in furring shall be achieved by use of two fasteners into studs at 16 inches and 24 inches on center, respectively.</p>					
FS16-21	<p>Revise as follows: TABLE 705.5 FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE^{a, d,} Portions of table not shown remain unchanged. g. Where Table 705.8 <u>Section 705.8.1</u> permits nonbearing exterior walls with unlimited area of unprotected openings,</p>	X			Minimal	Coordination.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	the required fire- resistance rating for the exterior walls is 0 hours.					
FS18-21	<p>Add new text as follows: 705.6 Continuity. <u>The fire-resistance rating of exterior walls shall extend from the top of the foundation or floor/ceiling assembly below to one of the following:</u> 1. <u>The underside of the floor or roof sheathing, deck or slab above.</u> 2. <u>The underside of a one-hour fire-resistance rated floor/ceiling or roof/ceiling assembly having a fire-resistance rating equal to or greater than the exterior wall and the fire separation distance is greater than 10 feet.</u> <u>Parapets shall be provided as required by Section 705.11.</u></p> <p>Revise as follows: 705.11.1 Parapet construction . <u>Required Parapets parapets shall have the same fire-resistance rating as that required for the supporting wall, and on any side adjacent to a roof surface, shall have noncombustible faces for the uppermost 18 inches (457 mm), including counterflashing and coping materials. The height of the parapet shall be not less than 30 inches (762 mm) above the point where the roof surface and the wall intersect. Where the roof slopes toward a parapet at a slope greater than 2 units vertical in 12 units horizontal (16.7- percent slope), the parapet shall extend to the same height as any portion of the roof within a fire separation distance where protection of wall openings is required, but the height shall be not less than 30 inches (762 mm).</u></p> <p>705.6 705.7 Structural stability. <u>Exterior walls shall extend to the height required by Section 705.11. Interior structural elements that brace the exterior wall but that are not located within the plane of the exterior wall shall have the minimum fire-resistance rating required in Table 601 for that structural element. Structural elements that brace the exterior wall but are located outside of the exterior wall or within the plane of the exterior wall shall have the minimum fire-resistance rating required in Table 601 and Table 705.5 for the exterior wall.</u></p>		X			Clarification.
FS19-21	<p>Add new text as follows: 705.6.1 Supporting- Floor Assemblies in TYPE III construction. <u>Construction that Type III construction where a floor assembly supports gravity loads from fire-resistance rated exterior walls</u></p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>shall have a fire resistance rating that is equal to or greater than the required fire resistance rating of the supported wall. For achieving the required fire resistance rating for exposure from the interior of the building, ceiling materials shall be permitted to contribute to the required fire resistance of the supporting construction. an exterior wall, the fire resistance rating of the portion of the floor assembly that supports the exterior wall shall not be less than the fire resistance rating required for the exterior wall in Table 601. The fire resistance rating provided by the portion of the floor assembly supporting and within the plane of the exterior wall shall be permitted to include the contribution of the ceiling membrane when considering exposure to fire from the inside. Where a floor assembly supports gravity loads from an exterior wall, the building elements of the floor construction within the plane of the exterior wall, including but not limited to, rim joists, rim boards, and blocking, shall be in accordance with the requirements for interior building elements of Type III Construction.</p> <p>705.6.1.1 Materials. The material requirements of floor/ceiling assemblies shall be in accordance with requirements for interior building elements for the Type of Construction, including portions of the floor/ceiling construction that support gravity loads from an exterior wall.</p>					
FS21-21	<p>Revise as follows:</p> <p>TABLE 705.8 MAXIMUM AREA OF EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION</p> <p>Portions of table not shown remain unchanged.</p> <p>g. The area of openings in an open parking structure <u>open parking garage</u> that complies in accordance with Section 406.5 with a fire separation distance of 10 feet or greater shall not be limited.</p>		X			Clarification.
FS29-21	<p>Add new text as follows:</p> <p>706.1.2 Double fire walls Deemed to comply. Double fire walls designed and constructed in accordance with NFPA 221 and its Annex shall be deemed to comply with this section subject to the limitations of Section 102.4. The required fire resistance rating shall be determined by Section 706.4.</p> <p>Revise as follows:</p>	X			Cost differential between double fire walls and independent fire walls.	Adds design option.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>706.2 Structural stability. <i>Fire walls</i> shall be designed and constructed to allow collapse of the structure on either side without collapse of the wall under fire conditions. <i>Fire walls</i> designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section.</p> <p>Exception: In <i>Seismic Design Categories</i> D through F, where double <i>fire walls</i> are used in accordance with NFPA 221, floor and roof sheathing not exceeding ³/₄ inch (19.05 mm) thickness shall be permitted to be continuous through the wall assemblies of <i>light frame construction</i>.</p>					
FS35-21	<p>Revise as follows:</p> <p>706.6 Vertical continuity. <i>Fire walls</i> shall extend from the foundation to a termination point not less than 30 inches (762 mm) above both adjacent roofs.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Stepped buildings in accordance with Section 706.6.1. Two-hour fire-resistance-rated walls shall be permitted to terminate at the underside of the roof sheathing, deck or slab, provided that <u>all of the following requirements are met:</u> <ol style="list-style-type: none"> The lower <i>roof assembly</i> within 4 feet (1220 mm) of the wall has not less than a 1-hour <i>fire-resistance rating</i> and the entire length and span of supporting elements for the rated <i>roof assembly</i> has a <i>fire-resistance rating</i> of not less than 1 hour. Openings in the roof shall not be located within 4 feet (1220 mm) of the <i>fire wall</i>. Each building shall be provided with not less than a Class B <i>roof covering</i>. 					
G1-22 Part I	<p>Revise as follows:</p> <p>[BS] GYPSUM BOARD. <u>A type of gypsum panel product consisting of a noncombustible core primarily of gypsum with paper surfacing.</u> The generic name for a family of sheet products consisting of a noncombustible core primarily of gypsum with paper surfacing.</p> <p>[BS] GYPSUM PANEL PRODUCT. The general name for a family of sheet products consisting essentially of gypsum complying with</p>		X		Clarification.	

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>the standards specified in Table 2506.2 and Table 2507.2, and Chapter 35. Gypsum board and glass mat gypsum panels are examples of gypsum panel products.</p> <p>[BS] GYPSUM SHEATHING. <i>Gypsum panel products</i> specifically manufactured with enhanced water resistance for use as a substrate for exterior surface materials.</p> <p>[BS] GYPSUM WALLBOARD. A <i>gypsum board</i> used primarily as an interior surfacing for building structures.</p>					
G1-22 Part II	<p>[F]415.11.7.4 Installations in corridors and above other occupancies. The installation of HPM piping and tubing within the space defined by the walls of corridors and the floor or roof above, or in concealed spaces above other occupancies, shall be in accordance with Sections 415.11.7.1 through 415.11.7.3 and the following conditions:</p> <ol style="list-style-type: none"> Automatic sprinklers shall be installed within the space unless the space is less than 6 inches (152 mm) in the least dimension. <i>Ventilation</i> not less than six air changes per hour shall be provided. The space shall not be used to convey air from any other area. Where the piping or tubing is used to transport HPM liquids, a receptor shall be installed below such piping or tubing. The receptor shall be designed to collect any discharge or leakage and drain it to an <i>approved</i> location. The 1-hour enclosure shall not be used as part of the receptor. HPM supply piping and tubing and nonmetallic waste lines shall be separated from the corridor and from occupancies other than Group H-5 by <i>fire barriers</i> or by an approved method or assembly that has <i>afire-resistance rating</i> of not less than 1 hour. Access openings into the enclosure shall be protected by approved fire-protection-rated assemblies. Readily accessible manual <u>Ready access to manual</u> or automatic remotely activated fail-safe emergency shutoff valves shall be installed on piping and tubing other than waste lines at the following locations: <ol style="list-style-type: none"> At branch connections into the <i>fabrication area</i>. At entries into <i>corridors</i>. <p>Exception: Transverse crossings of the <i>corridors</i> by supply piping that is enclosed within a ferrous pipe or tube for the width of the <i>corridor</i> need not comply with Items 1 through 5.</p>		X		Clarification.	

Table 6. 2024 IBC Changes Cost Impact

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		Decrease	Neutral	Increase		
		Sub Code:				
	<p>[F]914.1.1 Exterior access to shaftways. Outside openings accessible with access to the fire department and that open directly on a hoistway or shaftway communicating between two or more floors in a building shall be plainly marked with the word "SHAFTWAY" in red letters not less than 6 inches (152 mm) high on a white background. Such warning signs shall be placed so as to be readily discernible from the outside of the building.</p>					
G1-21 Part III	<p>Revise as follows:</p> <p>403.11.7 Lapped flanges. Lapped flanges shall be used only above ground or in exposed locations accessible with access for inspection.</p> <p>404.8.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in an accessible a portion of the building <u>with access</u> and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.</p> <p>404.14.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in an accessible <u>a portion</u> of the building <u>with access</u> and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.</p> <p>409.5.3 Located at manifold. Where the <i>appliance</i> shutoff valve is installed at a manifold, such shutoff valve shall be located within 50 feet (15 240 mm) of the <i>appliance</i> served and shall be readily accessible have ready access and <u>be</u> permanently identified. The <i>pipng</i> from the manifold to within 6 feet (1829 mm) of the <i>appliance</i> shall be designed, sized and installed in accordance with Sections 401 through 408.</p> <p>409.6 Shutoff valve for laboratories. Where provided with two or more fuel gas outlets, including table-, bench- and hood-mounted outlets, each laboratory space in educational, research, commercial and industrial <i>occupancies</i> shall be provided with a single dedicated shutoff valve through which all such gas outlets shall be supplied. The dedicated shutoff valve shall be readily accessible have ready access, <u>be</u> located within the laboratory space served, <u>be</u> located adjacent to the egress door from the space and shall be identified by <i>approved</i> signage stating "Gas Shutoff."</p>		X			Clarification.

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		Decrease	Neutral	Increase		
		Sub Code:				
	<p>411.1.6 Unions. A union fitting shall be provided for <i>appliances</i> connected by rigid metallic pipe. Such unions shall be accessible <u>have access</u> and <u>be</u> located within 6 feet (1829 mm) of the <i>appliance</i>.</p> <p>501.7.3 Connection to masonry fireplace flue. A connector shall extend from the <i>appliance</i> to the flue serving a masonry <i>fireplace</i> such that the flue gases are exhausted directly into the flue. The connector shall be accessible <u>have access</u> or <u>be</u> removable for inspection and cleaning of both the connector and the flue. <i>Listed</i> direct connection devices shall be installed in accordance with their listing.</p> <p>503.5.9 Cleanouts. Where a chimney that formerly carried flue products from liquid or solid fuel-burning appliances is used with an <i>appliance</i> using fuel gas, an accessible a cleanout <u>with access</u> shall be provided. The cleanout shall have a tight-fitting cover and shall be installed so its upper edge is not less than 6 inches (152 mm) below the lower edge of the lowest chimney inlet opening.</p> <p>503.12.6 Positioning. Draft hoods and draft regulators shall be installed in the position for which they were designed with reference to the horizontal and vertical planes and shall be located so that the relief opening is not obstructed by any part of the <i>appliance</i> or adjacent construction. The <i>appliance</i> and its draft hood shall be located so that the relief opening is accessible <u>has access</u> for checking vent operation.</p>					
G1-21 Part IV	<p>Revise as follows:</p> <p>[F] 1210.2.2 Walls and partitions. Walls and partitions within 2 feet (610 mm) of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of not less than 4 feet (1219 mm) above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.</p> <p>Exception: This section does not apply to the following buildings and spaces:</p> <ol style="list-style-type: none"> 1. Dwelling units and <i>sleeping units</i>. 2. Toilet rooms that are not accessible to the <u>for use by the general public</u> and that have not more than one water closet. Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture. 		X			Clarification.

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		Decrease	Neutral	Increase		
Sub Code:						
G1-21 Part V	<p>Revise as follows:</p> <p>306.1 Access. <i>Appliances</i>, controls devices, heat exchangers and HVAC system components that utilize energy shall be accessible <u>provide access</u> for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, venting systems or any other piping or ducts not connected to the <i>appliance</i> being inspected, serviced, repaired or replaced. A level working space not less than 30 inches deep and 30 inches wide (762 mm by 762 mm) shall be provided in front of the control side to service an <i>appliance</i>.</p> <p>506.3.2.2 Duct-to-hood joints. Duct-to-hood joints shall be made with continuous internal or external liquid-tight welded or brazed joints. Such joints shall be smooth, accessible <u>available</u> for inspection, and without grease traps.</p> <p>Exceptions: This section shall not apply to:</p> <ol style="list-style-type: none"> 1. A vertical duct-to-hood collar connection made in the top plane of the hood in accordance with all of the following: <ol style="list-style-type: none"> 1.1. The hood duct opening shall have a 1-inch-deep (25 mm), full perimeter, welded flange turned down into the hood interior at an angle of 90 degrees (1.57 rad) from the plane of the opening. 1.2. The duct shall have a 1-inch-deep (25 mm) flange made by a 1-inch by 1-inch (25 mm by 25 mm) angle iron welded to the full perimeter of the duct not less than 1 inch (25 mm) above the bottom end of the duct. 1.3. A gasket rated for use at not less than 1,500°F (816°C) is installed between the duct flange and the top of the hood. 1.4. The duct-to-hood joint shall be secured by stud bolts not less than 1/4 inch (6.4 mm) in diameter welded to the hood with a spacing not greater than 4 inches (102 mm) on center for the full perimeter of the opening. The bolts and nuts shall be secured with lockwashers. 2. <i>Listed</i> and <i>labeled</i> duct-to-hood collar connections installed in accordance with Section 304.1. 		X			Clarification.
G1-21 Part VI	<p>Revise as follows:</p> <p>[A] 110.1 General. Construction or work for which a permit is required shall be subject to inspection by the <i>code official</i> and such construction or work shall remain visible and able to be</p>		X			Clarification.

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>accessed for inspection purposes until <i>approved</i>. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain accessible <u>available</u> and exposed for inspection purposes. Neither the <i>code official</i> nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.</p> <p>303.1.1 Heaters. The electric power to heaters shall be controlled by a readily accessible <u>an on-off switch with ready access</u> that is an integral part of the heater, mounted on the exterior of the heater or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. Gas-fired heaters shall not be equipped with continuously burning ignition pilots.</p> <p>306.9 Valves under decks. Valves installed in or under decks shall be accessible <u>provided access</u> or operation, service, and maintenance. Where access through the deck walking surface is required, an access cover shall be provided for the opening in the deck. Such access covers shall be slip resistant and secured.</p> <p>313.4 Location. <u>Provide access to pumps</u> Pumps and motors shall be accessible for inspection and service in accordance with the manufacturer’s specifications.</p> <p>314.5 Vacuum fittings. Where installed, <u>provide access to submerged vacuum fittings</u> shall be accessible and <u>such fittings</u> shall be located not greater than 12 inches (305 mm) below the water level.</p> <p>324.2 Requirements. The equipment area or room floor shall be of concrete or other suitable material having a smooth slip-resistant finish and have positive drainage, including a sump drain pump, if necessary. Floors shall have a slope toward the floor drain or sump drain pump adequate to prevent standing water at all times. The opening to the equipment room or area shall be designed to provide access for all anticipated equipment. At least one hose bibb with backflow preventer shall be located</p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>in the equipment room or be accessible <u>allow for access</u> within an adequate distance of the equipment room so that a hose can service the entire room.</p> <p>409.4.3 Emergency response units. Pools covered by this chapter shall be provided with first aid equipment, including a first aid kit. First aid equipment and kits shall be located in an accessible location <u>to allow access</u>.</p> <p>504.1 Emergency shutoff switch. One emergency shutoff switch shall be provided to disconnect power to circulation and jet system pumps and air blowers. <u>Provide access to emergency</u> Emergency shutoff switches shall be accessible . Such switches <u>shall be</u> located within sight of the spa and shall be located not less than 5 feet (1524 mm) but not greater than 10 feet (3048 mm) horizontally from the inside walls of the spa.</p> <p>603.2 Class D-2 pools. Where a Class D-2 pool has a bather-accessible depth greater than 4¹/₂ feet (1372 mm), the floor shall have a distinctive marking at the 4¹/₂ feet (1372 mm) water depth.</p> <p>612.5.1 Water collection and treatment tank. Interactive water play features shall drain to a collection and treatment tank. The inside of the tank shall be accessible <u>provide access</u> for cleaning and inspection. The access hatch or lid shall be locked or require a tool to open. The tank capacity shall be not less than 1000 gallons or ten times the number of gallons in a minute when all nozzles are operating simultaneously, whichever is greater. The volume water in the tank, at the design water level, shall not decrease more than 15% of that volume when all pumps and discharge piping fill with water to the discharge points of all nozzles.</p> <p>Tanks shall be provided with a means to empty all water in the tank for the purposes of servicing or cleaning.</p> <p>704.7.2 Accessible Access to pumps and motors. Pumps and motors shall be accessible <u>provided access</u> for inspection and service in accordance with the pump and motor manufacturer’s instructions.</p> <p>704.7.3 Pump shutoff valves. An accessible <u>available</u> means of shut <u>shutting</u> off of the suction and discharge piping for the pump shall be provided for maintenance and removal of the pump <u>and be located with access</u>.</p>					

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	1001.6 Access. Electrical components that require placement or servicing shall be accessible <u>located with access.</u>					
E2-22	<p>1604.5.1 Multiple occupancies. Where a building or structure is occupied by two or more occupancies not included in the same <i>risk category</i>, it shall be assigned the classification of the highest <i>risk category</i> corresponding to the various occupancies. Where buildings or structures have two or more portions that are structurally separated, each portion shall be separately classified. Where a separated portion of a building or structure provides required access to, required egress from or shares life safety components <u>life safety systems, designated seismic systems, emergency power systems, or emergency and egress lighting systems</u> with another portion having a higher <i>risk category</i>, both portions shall be assigned to the higher <i>risk category</i>.</p> <p>Exception: Where a <i>storm shelter</i> designed and constructed in accordance with ICC 500 is provided in a building, structure or portion thereof normally occupied for other purposes, the <i>risk category</i> for the normal occupancy of the building shall apply unless the <i>storm shelter</i> is a designated emergency shelter in accordance with Table 1604.5.</p>		X			Clarification.
G3-21 Part I	<p>[BG] AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than <i>24-hour basis</i> to persons who are rendered <i>incapable of self-preservation</i> by the services provided or staff has accepted responsibility for care recipients already incapable.</p> <p>Revise as follows:</p> <p>1026.4.1 Capacity. The capacity of the refuge area shall be computed based on a <i>net floor area</i> allowance of 3 square feet (0.2787 m²) for each occupant to be accommodated therein. Where the <i>horizontal exit</i> also forms a <i>smoke compartment</i>, the capacity of the refuge area for Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities shall comply with Sections 407.5.3, 408.6.2, 420.6.1 and 422.3.2 as applicable.</p>		X			Clarification.
G3-21 Part II	<p>Revise as follows:</p> <p>805.2 Group I-2 and Group B ambulatory care facilities. The requirements in Sections 805.2.1 through 805.2.2 shall apply to Group I-2 occupancies and Group B ambulatory care facilities.</p> <p>808.1 Wastebaskets and linen containers in Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities.</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>Wastebaskets, linen containers and other waste containers, including their lids, located in Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities shall be constructed of noncombustible materials or of materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E1354 at an incident heat flux of 50 kW/m² in the horizontal orientation. Metal wastebaskets and other metal waste containers with a capacity of 20 gallons (75.7 L) or more shall be <i>listed</i> in accordance with UL 1315 and shall be provided with a noncombustible lid. Portable containers exceeding 32 gallons (121 L) shall be stored in an area classified as a waste and linen collection room and constructed in accordance with Table 509.1 of the International Building Code.</p> <p>Exception: Recycling containers complying with Section 808.1.2 are not required to be stored in waste and linen collection rooms.</p>					
G3-21 Part III	<p>Add new definition as follows: [BG] AMBULATORY CARE FACILITY. <u>Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable.</u></p> <p>Revise as follows: 609.1 Scope. This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following <i>occupancies</i>: Group I-1, Group I- 2, Group B ambulatory care facilities, medical offices, research and testing laboratories, and Group F facilities manufacturing pharmaceutical drugs and medicines.</p>		X			Clarification.
G3-21 Part IV	<p>Add new definition as follows: [BG] AMBULATORY CARE FACILITY. <u>Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the</u></p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<u>services provided or staff has accepted responsibility for care recipients already incapable.</u>					
G5-22 Part I	Add new definition as follows: <u>TYPE X. A type of gypsum panel product with special core additives to increase the fire resistance as specified by the applicable standards listed in Table 2506.2. (see the definition of 'Gypsum panel product')</u>		X			Clarification.
G5-22 Part II	Add new definition as follows: <u>TYPE X. A type of gypsum panel product with special core additives to increase the fire resistance as specified by the applicable standards specified in Section R702.3 and Part IX. (see the definition of 'Gypsum panel product')</u>		X			Clarification.
G5-21	Revise as follows: [BG] CUSTODIAL CARE. <u>Describes persons who receive assistance Assistance</u> —with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. <i>Custodial care</i> includes persons receiving care who have the ability to respond to emergency situations and may receive <i>limited verbal or physical assistance</i> . These care recipients may evacuate at a slower rate and/or who have mental and psychiatric complications. [BG] INCAPABLE OF SELF-PRESERVATION. <u>Describes persons Persons</u> who, because of age, physical limitations, mental limitations, chemical dependency or medical treatment, cannot respond as an individual to an emergency situation. LIMITED VERBAL OR PHYSICAL ASSISTANCE. <u>Describes persons Persons</u> who, because of age, physical limitations, cognitive limitations, treatment or chemical dependency, and may not independently recognize, respond or evacuate without limited verbal or physical assistance during an emergency situation. <u>Limited verbal Verbal</u> assistance includes prompting, giving and repeating instructions. <u>Limited physical Physical</u> assistance includes assistance with transfers to walking aids or mobility devices and assistance with egress.		X			Clarification.
G7-22	SECTION 403 HIGH-RISE BUILDINGS Revise as follows: [BS] 403.2.2 Structural integrity of interior exit stairways and elevator hoistway enclosures. For high-rise buildings of Risk		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p><i>Category III or IV in accordance with Section 1604.5, and for all buildings that are more than 420 feet (128 m) in building height, enclosures for interior exit stairways and elevator hoistway enclosures shall comply with Sections 403.2.2.1 through 403.2.2.4 403.2.2.3.</i></p> <p>Delete without substitution: [BS] 403.2.2.1 Wall assembly materials—soft body impact. The panels making up the enclosures for interior exit stairways and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.</p> <p>Revise as follows: [BS] 403.2.2.2 403.2.2.1 Wall assembly materials—hard body impact. The panels making up the enclosures for interior exit stairways and elevator hoistway enclosures that are not exposed to the interior of the enclosures for interior exit stairways or elevator hoistway enclosure. <u>Where an interior exit stairway enclosure or an elevator hoistway enclosure is constructed as an interior wall of the building, the panels applied to the exterior of the enclosure shall be in accordance with one of the following:</u></p> <ol style="list-style-type: none"> The wall assembly shall incorporate not fewer than two layers of impact-resistant panels, each of which meets or exceeds <u>Soft Body Impact Classification Level 2 and Hard Body Impact Classification Level 2</u> as measured by the test method described in ASTM C1629/C1629M. The wall assembly shall incorporate not fewer than one layer of impact-resistant panels that meet or exceed <u>Soft Body Impact Classification Level 2 and Hard Body Impact Classification Level 3</u> as measured by the test method described in ASTM C1629/C1629M. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds <u>Soft Body Impact Classification Level 2 and Hard Body Impact Classification Level 3</u> as measured by the test method described in ASTM C1629/C1629M. <p>[BS] 403.2.2.3 403.2.2.2 Concrete and masonry walls. Concrete or masonry walls shall be deemed to satisfy the requirements of Sections <u>Section 403.2.2.1 and 403.2.2.2.</u></p> <p>[BS] 403.2.2.4 403.2.2.3 Other wall assemblies. Any other wall assembly that provides impact resistance equivalent to that</p>					

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	required by Sections 403.2.2.1 for Soft Body Impact Classification Level 2 and 403.2.2.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.					
G8-21	<p>Revise as follows:</p> <p>[BF] FIRE PROTECTION RATING. The period of time that an opening protective prevents or retards the passage of excessive flames will maintain the ability to confine a fire as determined by tests specified in Section 716. Ratings are stated in hours or minutes.</p> <p>[BF] FIRE RESISTANCE. That property of materials or their assemblies that prevents or retards the passage of excessive heat, hot gases or flames under conditions of use.</p>		X			Clarification.
G8-22	<p>Revise as follows:</p> <p>[BS] 403.2.2.3 Concrete, and masonry and glass walls. Concrete or masonry walls shall be deemed to satisfy the requirements of Sections 403.2.2.1 and 403.2.2.2. Glass walls complying with the safety glazing impact requirements of CPSC 16 CFR 1201, Cat. II or ANSI Z97.1, Class A shall be deemed to satisfy the requirements of Sections 403.2.2.1 and 403.2.2.2.</p> <p>403.2.2.4 Glass walls. Glass walls complying with the safety glazing impact requirements of CPSC 16 CFR 1201, Cat. II or ANSI Z97.1, Class A shall be deemed to satisfy the requirements of Sections 403.2.2.1 and 403.2.2.2.</p>	X			Decreased by cost of testing walls.	Clarification.
G9-22	<p>Revise as follows:</p> <p>3301.2 Storage and placement. Construction equipment and materials shall be stored and placed so as not to endanger the public, the workers or adjoining adjacent property for the duration of the construction project.</p> <p>3302.2 Manner of removal. Waste materials shall be removed in a manner that prevents injury or damage to persons, adjoining adjacent properties and public rights-of-way.</p> <p>3303.5 Water accumulation. Provision shall be made to prevent the accumulation of water or damage to any foundations on the premises or the adjoining on adjacent property.</p> <p align="center">SECTION 3307</p> <p align="center">PROTECTION OF ADJOINING-ADJACENT PROPERTY</p> <p>[BS] 3307.1 Protection required. Adjoining Adjacent public and private property shall be protected from damage during</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>construction, remodeling and demolition work. Protection shall be provided for footings, foundations, party walls, chimneys, skylights and roofs.</p> <p>Provisions shall be made to control water runoff and erosion during construction or demolition activities. The person making or causing an excavation to be made shall provide written notice to the <i>owners</i> of adjoining adjacent buildings advising them that the excavation is to be made and that the adjoining adjacent buildings should be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation.</p>					
G11-22	<p>Revise as follows:</p> <p>[BS] 3307.1 Protection required. Adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Protection shall be provided for footings, foundations, party walls, chimneys, skylights and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities. The person making or causing an excavation to be made shall provide written notice to the <i>owners</i> of adjoining buildings <u>property</u> advising them that the excavation is to be made and that the adjoining buildings <u>property</u> should be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation.</p> <p>[BS] 3307.2 Excavation retention systems. Where a retention system is used to provide support of an excavation for protection of adjacent <u>property or structures</u>, the system shall conform to the requirements in Sections 3307.2.1 through 3307.2.3.</p> <p>[BS] 3307.2.2 Excavation retention system monitoring. The retention system design shall include requirements for monitoring of the system and adjacent <u>property or structures</u> for horizontal and vertical movement.</p>		X			Editorial.
G12-22	<p>Revise as follows:</p> <p>G109.1 Elevation. All new and replacement manufactured homes to be placed or substantially improved area shall be elevated such that the <u>top of the foundation for lowest floor of</u> the manufactured home is elevated to <u>at</u> or above the design flood elevation.</p>			X	Adds approximately \$1500 to the foundation cost	Safety and flood damage mitigation.
G13-22	<p>Revise as follows:</p> <p>APPENDIX G FLOOD-RESISTANT CONSTRUCTION</p>	X			Not installing engineered	Limits the size of detached

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Sub Code:																				
	<p>SECTION G112 OTHER BUILDING WORK</p> <p>G112.1 Garages and accessory structures. Garages and accessory structures shall be designed and constructed in accordance with ASCE 24., <u>subject to the limitations of this section:</u></p> <p>1. <u>In flood hazard areas other than coastal high hazard areas and Coastal A Zones, the floors of detached garages and detached accessory storage structures are permitted below the elevations specified in ASCE 24 provided such structures are used solely for parking or storage, are one story and not larger than 600 square feet (55.75 m²).</u></p> <p>2. <u>In coastal high hazard areas and Coastal A Zones, the floors of detached garages and detached accessory storage structures are permitted below the elevations specified in ASCE 24 provided such structures are used solely for parking or storage, are one story and are not larger than 100 square feet (9.29 m²). Such structures shall not be required to have breakaway walls or flood openings.</u></p>				flood opening devices saves approximately \$200-\$300 each.	accessory structures and detached garages that can be wet flood proofed.														
G14-22	<p>Add new text as follows:</p> <p align="center">APPENDIX H SIGNS</p> <p align="center">SECTION H106 ELECTRICAL</p> <p>H106.3 Listing. <u>Electric signs shall be listed and labeled in accordance with UL 48, and shall be installed in accordance with the manufacturer’s installation instructions.</u></p> <p>Revise as follows:</p> <p>TABLE H116.1 REFERENCED STANDARDS</p> <table border="1"> <thead> <tr> <th>STANDARD ACRONYM</th> <th>STANDARD NAME</th> <th>SECTIONS HEREIN REFERENCED</th> </tr> </thead> <tbody> <tr> <td>ASTM D635-14</td> <td><i>Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position</i></td> <td>H107.1.1</td> </tr> <tr> <td>NFPA 70-20</td> <td><i>National Electrical Code</i></td> <td>H106.1, H106.2</td> </tr> <tr> <td>NFPA 701-19</td> <td><i>Methods of Fire Test for Flame Propagation of Textiles and Films</i></td> <td>H106.1.1</td> </tr> <tr> <td>UL 48-11</td> <td><i>Electric Signs, with revisions through March 2021</i></td> <td>H106.1</td> </tr> </tbody> </table>	STANDARD ACRONYM	STANDARD NAME	SECTIONS HEREIN REFERENCED	ASTM D635-14	<i>Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position</i>	H107.1.1	NFPA 70-20	<i>National Electrical Code</i>	H106.1, H106.2	NFPA 701-19	<i>Methods of Fire Test for Flame Propagation of Textiles and Films</i>	H106.1.1	UL 48-11	<i>Electric Signs, with revisions through March 2021</i>	H106.1		X		Clarification.
STANDARD ACRONYM	STANDARD NAME	SECTIONS HEREIN REFERENCED																		
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UL 48-11	<i>Electric Signs, with revisions through March 2021</i>	H106.1																		
G15-21	<p>Revise as follows:</p> <p>[BG] HIGH-RISE BUILDING. A building with an occupied floor <u>or occupied roof</u> located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.</p>		X			Clarification.														
G15-22	<p>Revise as follows:</p> <p>APPENDIX J GRADING</p> <p>SECTION J103 PERMITS REQUIRED</p> <p>J103.2 Exemptions. A grading <i>permit</i> shall not be required for the following:</p>		X			Clarification.														

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	<p>1. Grading in an isolated, self-contained area, provided that the public is not endangered and that such grading will not adversely affect adjoining <u>adjacent</u> properties.</p> <p>2. Excavation for construction of a <i>structure</i> permitted under this code.</p> <p>3. Cemetery graves.</p> <p>4. Refuse disposal sites controlled by other regulations.</p> <p>5. Excavations for wells, or trenches for utilities.</p> <p>6. Mining, quarrying, excavating, processing or stockpiling rock, sand, gravel, aggregate or clay controlled by other regulations, provided that such operations do not affect the lateral support of, or significantly increase stresses in, soil on adjoining-adjacent <u>adjacent</u> properties.</p> <p>7. Exploratory excavations performed under the direction of a registered design professional.</p> <p>Exemption from the <i>permit</i> requirements of this appendix shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.</p> <p>SECTION J104 PERMIT APPLICATION AND SUBMITTALS Revise as follows: J104.2 Site plan requirements. In addition to the provisions of Section 107, a grading plan shall show the existing grade and finished grade in contour intervals of sufficient clarity to indicate the nature and extent of the work and show in detail that it complies with the requirements of this code. The plans shall show the existing grade on adjoining <u>adjacent</u> properties in sufficient detail to identify how grade changes will conform to the requirements of this code.</p>					
G17-21	<p>Revise as follows: [BF] INTUMESCENT FIRE-<u>RESISTIVE</u> RESISTANT <u>MATERIALS</u> COATINGS. Thin film Liquid mixture applied to substrates by brush, roller, spray or trowel which expands into a protective <u>insulating</u> foamed layer to provide fire-<u>resistive</u> resistant protection of the substrates when exposed to flame or intense heat.</p> <p>Delete without substitution: [BF] MASTIC FIRE-RESISTANT COATINGS. Liquid mixture applied to a substrate by brush, roller, spray or trowel that provides fire-</p>		X			Consolidate two definitions for the same material into one term.

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	<p>resistant protection of a substrate when exposed to flame or intense heat.</p> <p>Revise as follows:</p> <p>603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:</p> <p>.....</p> <p>21. Sprayed fire-resistant materials and intumescent <u>fire-resistive materials</u> and mastic resistant coatings, determined on the basis of <i>fire resistance</i> tests in accordance with Section 703.2 and installed in accordance with Sections 1705.15 and 1705.16, respectively.</p> <p>.....</p> <p>722.5.1.3 Sprayed fire-resistive resistant materials. The <i>fire resistance</i> of wide-flange structural steel columns protected with sprayed fire-resistive resistant materials, as illustrated in Figure 722.5.1(5), shall be permitted to be determined from the following expression:</p> <p>.....</p> <p>The <i>fire resistance</i> of structural steel columns protected with <u>intumescent fire-resistive materials</u> or mastic fire-resistant coatings shall be determined on the basis of <i>fire-resistance</i> tests in accordance with Section 703.2.</p> <p>722.5.2.2 Sprayed fire-resistive resistant materials. The provisions in this section apply to structural steel beams and girders protected with sprayed fire-resistive resistant materials. Larger or smaller beam and girder shapes shall be permitted to be substituted for beams specified in <i>approved</i> unrestrained or restrained fire-resistance-rated assemblies, provided that the thickness of the fire-resistive resistant material is adjusted in accordance with the following expression:</p> <p>The <i>fire resistance</i> of structural steel columns protected with <u>intumescent fire-resistive materials</u> or mastic fire-resistant coatings shall be determined on the basis of <i>fire-resistance</i> tests in accordance with Section 703.2.</p> <p>722.5.2.3 Structural steel trusses. The <i>fire resistance</i> of structural steel trusses protected with fire-resistant materials sprayed to each of the individual truss elements shall be permitted to be determined in accordance with this section. The</p>				-	

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		Sub Code:				
	<p>thickness of the fire-resistant material shall be determined in accordance with Section 722.5.1.3. The weight-to-heated-perimeter ratio (<i>W/D</i>) of truss elements that can be simultaneously exposed to fire on all sides shall be determined on the same basis as columns, as specified in Section 722.5.1.1. The weight-to-heated-perimeter ratio (<i>W/D</i>) of truss elements that directly support floor or roof assembly shall be determined on the same basis as beams and girders, as specified in Section 722.5.2.1.</p> <p>The <i>fire resistance</i> of structural steel trusses protected with intumescent <u>fire-resistive materials</u> or mastic fire-resistant coatings shall be determined on the basis of <i>fire resistance</i> tests in accordance with Section 703.2.</p> <p>[BF] 1705.16 Mastic and intumescent <u>Intumescent</u> fire-resistant coatings <u>resistive materials</u>. <i>Special inspections</i> and tests for mastic and intumescent fire-resistant coatings <u>resistive materials</u> applied to structural elements and decks shall be performed in accordance with AWCI 12-B. <i>Special inspections</i> and tests shall be based on the fire-resistance design as designated in the <i>approved construction documents</i>. <i>Special inspections</i> and tests shall be performed during construction. Additional visual inspection shall be performed after the rough installation and, where applicable, prior to the concealment of electrical, automatic sprinkler, mechanical and plumbing systems.</p>					
G20-21 Part I	<p>Add new definition as follows: <u>OCUPIABLE ROOF.</u> <u>An exterior space on a roof that is designed for human occupancy, other than maintenance or repair, and which is equipped with a means of egress system meeting the requirements of this code.</u> Revise as follows: [BG] PENTHOUSE. An enclosed, unoccupiable unoccupied rooftop structure used for sheltering mechanical and electrical equipment, tanks, elevators and related machinery, <i>stairways</i>, and vertical <i>shaft</i> openings. 302.1 Occupancy classification. Occupancy classification is the formal designation of the primary purpose of the building,</p>		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>structure or portion thereof. Structures shall be classified into one or more of the occupancy groups specified in this section based on the nature of the hazards and risks to building occupants generally associated with the intended purpose of the building or structure. An area, room or space that is intended to be occupied at different times for different purposes shall comply with all applicable requirements associated with such potential multipurpose. Structures containing multiple occupancy groups shall comply with Section 508 . Where a structure is proposed for a purpose that is not specified in this section, such structure shall be classified in the occupancy it most nearly resembles based on the fire safety and relative hazard. <u>Occupiable</u> Occupied roofs shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard, and shall comply with Section 503.1.4</p> <p>1.</p> <p>503.1.4 <u>Occupiable</u> Occupied roofs. A roof level or portion thereof shall be permitted to be used as an occupiable occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the <i>story</i> immediately below the roof. The area of the <u>occupiable</u> occupied roofs shall not be included in the <i>building area</i> as regulated by Section 506. An <u>occupiable</u> occupied roof shall not be included in the <i>building height</i> or number of <i>stories</i> as regulated by Section 504, provided that the <i>penthouses</i> and other enclosed <i>rooftop structures</i> comply with Section 1511.</p> <p>Exceptions:</p> <p>1. The occupancy located on an <u>occupiable</u> occupied roof shall not be limited to the occupancies allowed on the <i>story</i> immediately below the roof where the building is equipped throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Sections 907.5.2.1 and 907.5.2.3 is provided in the area of the <u>occupiable</u> occupied roof. <i>Emergency voice/alarm communication</i> system notification per Section 907.5.2.2 shall also be provided in the area of the <u>occupiable</u> occupied roof where such system is required elsewhere in the building.</p>					

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	<p>2. Assembly occupancies shall be permitted on roofs of open parking spaces of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.</p> <p>503.1.4.1 Enclosures over <u>occupiable</u> occupied roof areas. Elements or structures enclosing the <u>occupiable</u> occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the <u>occupiable</u> occupied roof.</p> <p>Exception: <i>Penthouses</i> constructed in accordance with Section 1511.2 and towers, domes, spires and cupolas constructed in accordance with Section 1511.5.</p> <p>1004.7 Outdoor areas. <i>Yards, patios, <u>occupiable</u> occupied roofs, courts</i> and similar outdoor areas accessible to and usable by the building occupants shall be provided with <i>means of egress</i> as required by this chapter. The <i>occupant load</i> of such outdoor areas shall be assigned by the <i>building official</i> in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, <i>means of egress</i> requirements for the building shall be based on the sum of the <i>occupant loads</i> of the building plus the outdoor areas.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Outdoor areas used exclusively for service of the building need only have one <i>means of egress</i>. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2. <p>1006.1 General. The number of <i>exits</i> or <i>exit access doorways</i> required within the <i>means of egress</i> system shall comply with the provisions of Section 1006.2 for spaces, including <i>mezzanines</i>, and Section 1006.3 for <i>stories</i> or <u>occupiable</u> occupied roofs.</p> <p>1006.3 Egress from stories or <u>occupiable</u> occupied roofs. The <i>means of egress</i> system serving any <i>story</i> or <u>occupiable</u> occupied roof shall be provided with the number of separate and distinct <i>exits</i> or access to <i>exits</i> based on the aggregate <i>occupant load</i> served in accordance with this section.</p> <p>1006.3.1 Occupant load. Where <i>stairways</i> serve more than one <i>story</i>, or more than one <i>story</i> and an <u>occupiable</u> occupied roof, only the <i>occupant load</i> of each <i>story</i> or <u>occupiable</u> occupied roof,</p>					

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	<p>considered individually, shall be used when calculating the required number of <i>exits</i> or access to <i>exits</i> serving that <i>story</i>.</p> <p>1006.3.2 Path of egress travel. The path of egress travel to an <i>exit</i> shall not pass through more than one adjacent <i>story</i>.</p> <p>Exception: The path of egress travel to an <i>exit</i> shall be permitted to pass through more than one adjacent <i>story</i> in any of the following:</p> <ol style="list-style-type: none"> Exterior exit access stairways and ramps between <u>occupiable</u> occupied roofs. <p>1006.3.3 Egress based on occupant load. Each story and occupiable occupied roof shall have the minimum number of separate and distinct exits, or access to exits, as specified in Table 1006.3.3. A single exit or access to a single exit shall be permitted in accordance with Section 1006.3.4. The required number of exits, or exit access stairways or ramps providing access to exits, from any story or <u>occupiable</u> occupied roof shall be maintained until arrival at the exit discharge or a public way.</p> <p>1006.3.4 Single exits. A single exit or access to a single exit shall be permitted from any story or <u>occupiable</u> occupied roof where one of the following conditions exists:</p> <ol style="list-style-type: none"> 					
	<p>1009.2.1 Elevators required. In buildings where a required accessible floor or <u>occupiable</u> occupied roof is four or more stories above or below a <i>level of exit discharge</i>, not less than one required <i>accessible means of egress</i> shall be an elevator complying with Section 1009.4.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> In buildings equipped throughout with <i>sprinkler system</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a <i>horizontal exit</i> and located at or above the <i>levels of exit discharge</i>. In buildings equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a <i>ramp</i> conforming to the provisions of Section 1012. <p>1011.12 Stairway to roof. In buildings four or more stories above grade plane, one <i>stairway</i> shall extend to the roof surface unless</p>					

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	<p>the roof has a slope steeper than four units vertical in 12 units horizontal (33-percent slope).</p> <p>Exception: Other than where required by Section 1011.12.1, in buildings without an <u>occupiable</u> occupied roof access to the roof from the top story shall be permitted to be by an alternating tread device, a ships ladder or a permanent ladder.</p> <p>1011.12.2 Roof access. Where a <i>stairway</i> is provided to a roof, access to the roof shall be provided through a <i>penthouse</i> complying with Section 1511.2.</p> <p>Exception: In buildings without an <u>occupiable</u> occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet (1.5 m²) in area and having a minimum dimension of 2 feet (610 mm).</p> <p>1011.14 Alternating tread devices. <i>Alternating tread devices</i> are limited to an element of a <i>means of egress</i> in buildings of Groups F, H and S from a <i>mezzanine</i> not more than 250 square feet (23 m²) in area and that serves not more than five occupants; in buildings of Group I-3 from a guard tower, observation station or control room not more than 250 square feet (23 m²) in area and for access to unoccupiable unoccupied roofs. <i>Alternating tread devices</i> used as a <i>means of egress</i> shall not have a rise greater than 20 feet (6096 mm) between floor levels or landings.</p> <p>1011.15 Ship's ladders. Ship's ladders are permitted to be used in Group I-3 as a component of a <i>means of egress</i> to and from control rooms or elevated facility observation stations not more than 250 square feet (23 m²) with not more than three occupants and for access to <u>unoccupiable</u> unoccupied roofs. The minimum clear width at and below the <i>handrails</i> shall be 20 inches (508 mm). Ship's ladders shall be designed for the live loads indicated in Section 1607.17.</p> <p>1011.16 Ladders. Permanent ladders shall not serve as a part of the <i>means of egress</i> from occupied spaces within a building. Permanent ladders shall be constructed in accordance with Section 306.5 of the International Mechanical Code and designed for the live loads indicated in Section 1607.17. Permanent ladders shall be permitted to provide access to the following areas:</p> <ol style="list-style-type: none"> Spaces frequented only by personnel for maintenance, repair or monitoring of equipment. 					

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	<p>2. Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.</p> <p>3. Raised areas used primarily for purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands.</p> <p>4. Elevated levels in Group U not open to the general public.</p> <p>5. Nonoccupiable Nonoccupied roofs that are not required to have <i>stairway</i> access in accordance with Section 1011.12.1.</p> <p>6. Where permitted to access equipment and appliances in accordance with Section 306.5 of the International Mechanical Code.</p> <p>1019.3 Occupancies other than Groups I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing <i>exit access stairways</i> or <i>ramps</i> shall be enclosed with a shaft enclosure constructed in accordance with Section 713.</p> <p>Exceptions:</p> <p>1.</p> <p>9. Exterior exit access stairways or ramps between <u>occupiable</u> occupied roofs.</p> <p>1104.4 Multistory buildings and facilities. At least one accessible route shall connect each accessible story, mezzanine and <u>occupiable</u> occupied roofs in multilevel buildings and facilities.</p> <p>Exceptions:</p> <p>1. An <i>accessible</i> route is not required to <i>stories, mezzanines</i> and <u>occupiable</u> occupied roofs that have an aggregate area of not more than 3,000 square feet (278.7 m²) and are located above and below accessible levels. This exception shall not apply to:</p> <p>1.1</p> <p>2. <i>Stories, mezzanines</i> or <u>occupiable</u> occupied roofs that do not contain accessible elements or other spaces as determined by Section 1108 or 1109 are not required to be served by an accessible route from an <i>accessible</i> level.</p> <p>3.</p>					
G20-21 Part II	<p>Add new definition as follows:</p> <p><u>OCCUPIABLE ROOF.</u></p> <p><u>An exterior space on a roof that is designed for human occupancy, other than maintenance or repair, and which is equipped with a means of egress system meeting the requirements of this code.</u></p>		X			Editorial.

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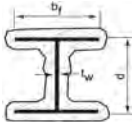
CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>Revise as follows: 903.2.1.6 Assembly occupancies on roofs. Where an occupied <u>occupiable</u> roof has an assembly occupancy with an <i>occupant load</i> exceeding 100 for Group A-2 and 300 for other Group A occupancies, all floors between the occupied occupiable roof and the <i>level of exit discharge</i> shall be equipped with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1 or 903.3.1.2. Exception: Open parking garages of Type I or Type II construction.</p>					
G29-21	<p>Revise as follows: [BF] SPRAYED FIRE-RESISTIVE RESISTANT MATERIALS. Cementitious or fibrous materials that are sprayed to provide fire-resistant protection of the substrates. 403.2.3 Sprayed fire-resistive resistant materials (SFRM). The bond strength of the SFRM installed throughout the building shall be in accordance with Table 403.2.3. 412.2.1.3 Sprayed fire-resistive resistant materials (SFRM). The bond strength of the SFRM installed in airport traffic control towers shall be in accordance with Section 403.2.3 where the control cab is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access. 603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3: 1. 21. Sprayed fire-resistive resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.15 and 1705.16, respectively. 22. 704.13 Sprayed fire-resistive resistant materials (SFRM). Sprayed fire-resistant materials (SFRM) shall comply with Sections 704.13.1 through 704.13.5.</p> 		X		Clarification.	

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	<p>FIGURE 722.5.1(5) WIDE FLANGE STRUCTURAL STEEL COLUMNS WITH SPRAYED FIRE-RESISTIVE RESISTANT-MATERIALS</p> <p>722.5.1.1 General. These procedures establish a basis for determining the fire resistance of column assemblies as a function of the thickness of fire-resistant material and, the weight, W, and heated perimeter, D, of structural steel columns. As used in these sections, W is the average weight of a structural steel column in pounds per linear foot. The heated perimeter, D, is the inside perimeter of the fire- resistant <u>resistive</u> material in inches as illustrated in Figure 722.5.1(1).</p> <p>722.5.1.3 Sprayed fire-resistive resistant materials.(SFRM). The <i>fire resistance</i> of wide-flange structural steel columns protected with <u>SFRM</u> sprayed fire resistant materials, as illustrated in Figure 722.5.1(5), shall be permitted to be determined from the following expression:</p> <p>.....</p> <p><i>h</i> = Thickness of <u>SFRM</u> sprayed fire-resistant material (inches).</p> <p>.....</p> <p>The fire resistance of structural steel columns protected with intumescent or mastic <u>fire-resistive</u> fire-resistant coatings shall be determined on the basis of fire-resistance tests in accordance with Section 703.2.</p> <p>722.5.1.3.2 Identification. Sprayed <u>fire-resistive</u> resistant materials shall be identified by density and thickness required for a given <i>fire- resistance rating</i>.</p> <p>722.5.2.2 Sprayed fire-resistive resistant materials (SFRM). The provisions in this section apply to structural steel beams and girders protected with (<u>SFRM</u>) sprayed fire-resistant materials. Larger or smaller beam and girder shapes shall be permitted to be substituted for beams specified in <i>approved</i> unrestrained or restrained fire-resistance-rated assemblies, provided that the thickness of the fire-resistant <u>SFRM</u> material is adjusted in accordance with the following expression:</p> <p>.....</p> <p><i>h</i> = Thickness of <u>SFRM</u> sprayed fire-resistant material (inches).</p> <p>.....</p> <p>The <i>fire resistance</i> of structural steel columns protected with intumescent or mastic <u>fire-resistive</u> fire-resistant coatings shall be determined on the basis of <i>fire-resistance</i> tests in accordance with Section 703.2.</p>					

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	<p>[BF] 1705.15 Sprayed fire-resistive-resistant materials (SFRM). <i>Special inspections</i> and tests of <u>SFRM</u> sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.15.1 through 1705.15.6. <i>Special inspections</i> shall be based on the fire-resistance design as designated in the <i>approved construction documents</i>. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. <i>Special inspections</i> and tests shall be performed during construction with an additional visual inspection after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, and before concealment where applicable. The required sample size shall not exceed 110 percent of that specified by the referenced standards in Sections 1705.15.4.1 through 1705.15.4.9.</p> <p>[BF] 1705.15.2 Structural member surface conditions. The surfaces shall be prepared in accordance with the <i>approved</i> fire-resistance design and the written instructions of <i>approved</i> manufacturers. The prepared surface of structural members to be sprayed shall be inspected by the <i>special inspector</i> before the application of the <u>SFRM</u> sprayed fire-resistant material.</p> <p>[BF] 1705.15.4 Thickness. Not more than 10 percent of the thickness measurements of the sprayed fire-resistant materials <u>SFRM</u> applied to floor, roof and wall assemblies and structural members shall be less than the thickness required by the <i>approved</i> fire-resistance design, and none shall be less than the minimum allowable thickness required by Section 1705.15.4.1.</p> <p>[BF] 1705.15.4.1 Minimum allowable thickness. For design thicknesses 1 inch (25 mm) or greater, the minimum allowable individual thickness shall be the design thickness minus 1/4 inch (6.4 mm). For design thicknesses less than 1 inch (25 mm), the minimum allowable individual thickness shall be the design thickness minus 25 percent. Thickness shall be determined in accordance with ASTM E605. Samples of the <u>SFRM</u> sprayed fire-resistant materials shall be selected in accordance with Sections 1705.15.4.2 and 1705.15.4.3.</p> <p>[BF] 1705.15.4.2 Floor, roof and wall assemblies. The thickness of the <u>SFRM</u> sprayed fire-resistant material applied to floor, roof and wall assemblies shall be determined in accordance with</p>					

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	<p>ASTM E605, making not less than four measurements for each 1,000 square feet (93 m²) of the sprayed area, or portion thereof, in each story.</p> <p>[BF] 1705.15.4.5 Structural members. The thickness of the <u>SFRM</u> sprayed fire-resistant material applied to structural members shall be determined in accordance with ASTM E605. Thickness testing shall be performed on not less than 25 percent of the structural members on each floor.</p> <p>[BF] 1705.15.5 Density. The density of the <u>SFRM</u> sprayed fire-resistant material shall be not less than the density specified in the <i>approved</i> fire-resistance design. Density of the sprayed fire-resistant material <u>SFRM</u> shall be determined in accordance with ASTM E605. The test samples for determining the density of the sprayed fire-resistant materials <u>SFRM</u> shall be selected as follows:</p> <ol style="list-style-type: none"> 1. From each floor, roof and wall assembly at the rate of not less than one sample for every 2,500 square feet (232 m²) or portion thereof of the sprayed area in each story. 2. From beams, girders, trusses and columns at the rate of not less than one sample for each type of structural member for each 2,500 square feet (232 m²) of floor area or portion thereof in each <i>story</i>. <p>[BF] 1705.15.6 Bond strength. The cohesive/adhesive bond strength of the cured sprayed fire-resistant material <u>SFRM</u> applied to floor, roof and wall assemblies and structural members shall be not less than 150 pounds per square foot (psf) (7.18 kN/m²). The cohesive/adhesive bond strength shall be determined in accordance with the field test specified in ASTM E736 by testing in-place samples of the sprayed fire-resistant material <u>SFRM</u> selected in accordance with Sections 1705.15.6.1 through 1705.15.6.3.</p> <p>[BF] 1705.15.6.1 Floor, roof and wall assemblies. The test samples for determining the cohesive/adhesive bond strength of the <u>SFRM</u> sprayed fire-resistant materials shall be selected from each floor, roof and wall assembly at the rate of not less than one sample for every 2,500 square feet (232 m²) of the sprayed area, or portion thereof, in each <i>story</i>.</p> <p>[BF] 1705.15.6.2 Structural members. The test samples for determining the cohesive/adhesive bond strength of the <u>SFRM</u> sprayed fire-resistant materials shall be selected from beams,</p>					

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	<p>girders, trusses, columns and other structural members at the rate of not less than one sample for each type of structural member for each 2,500 square feet (232 m²) of floor area or portion thereof in each story.</p> <p>[BF] 1705.15.6.3 Primer, paint and encapsulant bond tests. Bond tests to qualify a primer, paint or encapsulant shall be conducted where the SFRM sprayed fire-resistant material is applied to a primed, painted or encapsulated surface for which acceptable bond-strength performance between these coatings and the fire-resistant material SFRM has not been determined. A bonding agent <i>approved</i> by the SFRM manufacturer shall be applied to a primed, painted or encapsulated surface where the bond strengths are found to be less than required values.</p>					
G32-21	<p>Revise as follows:</p> <p>304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • • <u>Lithium-ion or lithium metal battery testing, research and development</u> • <p>306.2 Moderate-hazard factory industrial, Group F-1. Factory industrial uses that are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • • <u>Energy storage systems (ESS) and equipment containing lithium-ion or lithium metal batteries</u> • • <u>Vehicles powered by lithium-ion or lithium metal batteries</u> • <p>311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:</p> <ul style="list-style-type: none"> • • <u>Lithium-ion or lithium Metal batteries</u> • 		X		Clarification.	

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Sub Code:																															
G33-21	<p>Revise as follows:</p> <p>304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • ■ Electronic data processing <u>entry</u> • <p>1004.8 Concentrated business use areas. The <i>occupant load</i> factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data <u>entry</u> processing centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. Where approved by the <i>building official</i>, the <i>occupant load</i> for concentrated business use areas shall be the actual <i>occupant load</i>, but not less than one occupant per 50 square feet (4.65 m²) of gross occupiable floor space.</p>		X			Clarification.																									
G36-21	<p>[F] TABLE 307.1(1) MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD^{a,c,j,m,n}</p> <p>Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th rowspan="2">MATERIAL CLASS</th> <th rowspan="2">GROUP</th> <th rowspan="2">WHEN MAXIMUM QUANTITY IS EXCEEDED</th> <th rowspan="2">SOLID WHEN THE POUNDS (cubic feet)</th> <th rowspan="2">LIQUID GALLONS (pounds)</th> </tr> <tr> <th>MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED</th> <th>WHEN THE POUNDS (cubic feet)</th> <th>LIQUID GALLONS (pounds)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Combustible liquid</td> <td>I</td> <td>H-2 or H-3</td> <td>NA</td> <td>120d, e</td> </tr> <tr> <td>IIA</td> <td>H-2 or H-3</td> <td></td> <td>330d, e</td> </tr> <tr> <td>IIB</td> <td>NA</td> <td></td> <td>13,200e, f</td> </tr> </tbody> </table> <p>TABLE 307.1.1 HAZARDOUS MATERIAL EXEMPTIONS^a</p> <p>Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>Material Classification</th> <th>Occupancy Exemption or Application</th> </tr> </thead> <tbody> <tr> <td>Explosives</td> <td>Groups B, Storage of special industrial ex F, M and S</td> </tr> </tbody> </table>	MATERIAL CLASS	GROUP	WHEN MAXIMUM QUANTITY IS EXCEEDED	SOLID WHEN THE POUNDS (cubic feet)	LIQUID GALLONS (pounds)	MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	WHEN THE POUNDS (cubic feet)	LIQUID GALLONS (pounds)	Combustible liquid	I	H-2 or H-3	NA	120d, e	IIA	H-2 or H-3		330d, e	IIB	NA		13,200e, f	Material Classification	Occupancy Exemption or Application	Explosives	Groups B, Storage of special industrial ex F, M and S		X			Editorial.
MATERIAL CLASS	GROUP						WHEN MAXIMUM QUANTITY IS EXCEEDED	SOLID WHEN THE POUNDS (cubic feet)	LIQUID GALLONS (pounds)																						
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Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY					IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
						Decrease	Neutral	Increase		
Sub Code:										
		Groups M and R-3	Storage of black powder, smokeless propellant, and small arms primers <u>is are</u> not limited							
	Flammable and combustible liquids and gases	Fuel oil	The quantity of fuel oil storage complying with Section 605.4.2 <u>603.3.2</u> of the International Fire Code is not limited							
	Any	Refrigeration systems	The quantity of refrigerants in refrigeration systems is not limited. To qualify for allowance, such systems shall comply with Section 608 of the International Fire Code and Chapter 11 of the International Mechanical Code							
	<p>d. For hazardous materials in Group B higher education laboratory occupancies, See Section 428 and Chapter 38 of the International Fire Code. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.</p> <p>n. For storage and display quantities oxidizers, unstable (reactive) materials, and water reactive materials stored or displayed in Group M occupancies and storage quantities or stored in Group S occupancies, see section 414.2.5.1 complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).</p> <p>e. For flammable and combustible liquid storage in Group M occupancy wholesale and retail sales uses, see Section 414.2.5.2. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.</p> <p>p. The following shall not be included in determining the maximum allowable quantities:</p> <ol style="list-style-type: none"> 1. Liquid or gaseous fuel in fuel tanks on vehicles. 2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with the International Fire Code. 3. Gaseous fuels in piping systems and fixed appliances regulated by the International Fuel Gas Code. 									

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>4. Liquid fuels in piping systems and fixed appliances regulated by the <i>International Mechanical Code</i>.</p> <p>5. Alcohol-based hand rubs classified as Class I or II liquids in dispensers that are installed in accordance with Sections 5705.5 and 5705.5.1 of the International Fire Code. The location of the alcohol-based hand rub (ABHR) dispensers shall be provided in the construction documents.</p> <p>q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.</p> <p>[F] TABLE 307.1(2) MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A HEALTH HAZARD^{a, c, f, h, i}</p> <p>c. <u>For hazardous materials in Group B higher education laboratory occupancies, See Section 428 and Chapter 38 of the International Fire Code.</u> <u>In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.</u></p> <p>f. <u>For corrosive, highly toxic and toxic materials, stored or displayed in Group M occupancies or stored in Group S occupancies, see Section 414.2.5.1.</u> <u>For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).</u></p> <p>[F] 307.1.1 Occupancy Exemptions<u>Uses other than Group H. Storage, use and handling of hazardous materials in accordance with Table 307.1.1 shall not be counted as contributing to Maximum Allowable Quantities and shall not cause classification of an occupancy to be Group H. Such storage, use and handling shall comply with applicable provisions of the International Fire Code. An occupancy that stores, uses or handles <i>hazardous materials</i> as described in one or more of the following items shall not be classified as</u></p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Group H, but shall be classified as the occupancy that it most nearly resembles.</p> <ol style="list-style-type: none"> 1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the <i>International Fire Code</i>. 2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the <i>International Fire Code</i>. 3. Closed piping system containing <i>flammable or combustible liquids</i> or gases utilized for the operation of machinery or equipment. 4. Cleaning establishments that utilize <i>combustible liquid</i> solvents having a <i>flash point</i> of 140°F (60°C) or higher in closed systems employing equipment <i>listed</i> by an <i>approved</i> testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour <i>fire barriers</i> constructed in accordance with Section 707 or 1-hour <i>horizontal assemblies</i> constructed in accordance with Section 711, or both. 5. Cleaning establishments that utilize a liquid solvent having a <i>flash point</i> at or above 200°F (93°C). 6. Liquor stores and distributors without bulk storage. 7. Refrigeration systems. 8. The storage or utilization of materials for agricultural purposes on the premises. 9. Stationary storage battery systems installed in accordance with the <i>International Fire Code</i>. 10. <i>Corrosive</i> personal or household products in their original packaging used in retail display. 11. Commonly used <i>corrosive</i> building materials. 12. Buildings and structures occupied for <i>aerosol product</i> storage, aerosol cooking spray products or plastic aerosol 3 products shall be classified as Group S-1, provided that such buildings conform to the requirements of the <i>International Fire Code</i>. 13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid <i>hazardous materials</i> in quantities not exceeding the maximum 					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>allowable quantity per control area in Group M or S occupancies complying with Section 414.2.5.</p> <p>14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the <i>International Fire Code</i>.</p> <p>15. Stationary fuel cell power systems installed in accordance with the <i>International Fire Code</i>.</p> <p>16. Capacitor energy storage systems in accordance with the <i>International Fire Code</i>.</p> <p>17. Group B higher education laboratory occupancies complying with Section 428 and Chapter 38 of the International Fire Code.</p> <p>18. Distilling or brewing of beverages conforming to the requirements of the <i>International Fire Code</i>.</p> <p>19. The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the <i>International Fire Code</i>.</p> <p>Add new text as follows: TABLE 307.1.1 HAZARDOUS MATERIAL EXEMPTIONS^a <u>a. Exempted materials and conditions listed in this table are required to comply with applicable provisions of the <i>International Fire Code</i> this code that are not based or exceeding allowable quantities in Section 5003.</u></p> <p>Revise as follows: [F] 414.1 General. <u>The provisions of Sections 414.1 through 414.6 shall apply to buildings Buildings and structures occupied for the manufacturing, processing, dispensing, use or storage of hazardous materials shall comply with Sections 414.1 through 414.6.</u></p> <p>Exception: <u>Exemptions listed in Table 307.1.1 shall not be required to comply with Section 414.</u></p> <p>[F] 415.1 General. <u>Occupancies classified as Group H-1, H-2, H-3, H-4 and H-5 in accordance with Section 307 shall comply with The provisions of Sections 415.1 through 415.11 shall apply to the storage and use of hazardous materials in excess of the maximum allowable quantities per control area listed in Section 307.1.</u></p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>5001.1 Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter. This chapter shall apply to all hazardous materials, other than those materials and conditions listed in Table 5001.1, including those materials regulated elsewhere in this code, except that where specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed. <i>(balance unchanged)</i></p>					
G40-21	<p>Revise as follows: [F] 307.3.1 Occupancies containing explosives not classified as H-1. The following occupancies containing <i>explosive</i> materials shall be classified as follows:</p> <ol style="list-style-type: none"> 1. Division 1.3 <i>explosive</i> materials that are used and maintained in a form where either confinement or configuration will not elevate the hazard from a mass fire to mass <i>explosion</i> hazard shall be allowed in H-2 occupancies. 2. <u>Division 1.4 explosive materials that are used and maintained in a form that only pose a minor explosion hazard shall be allowed in H-3 occupancies.</u> 2 <u>3. Articles, including articles packaged for shipment, that are not regulated as a Division 1.4 explosive under Bureau of Alcohol, Tobacco, Firearms and Explosives regulations, or unpackaged articles used in process operations that do not propagate a detonation or deflagration between articles shall be allowed in H-3 occupancies.</u> 		X			Clarification.
G41-21	<p>Revise as follows: [F] 307.4 High-hazard Group H-2. Buildings and structures containing materials that pose a deflagration hazard or a hazard from accelerated burning shall be classified as Group H-2. Such materials shall include, but not be limited to, the following:</p> <p>..... <u>Category 1A Flammable gases.</u> <u>Category 1B Flammable gases having a burning velocity greater than 3.9 inches per second (10 cm/s).</u> </p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>[F] 307.5 High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a <i>physical hazard</i> shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:</p> <p>.....</p> <p><u>Category 1B flammable gases</u> having a burning velocity of 3.9 inches per second (10 cm/s) or less</p> <p>.....</p>					
G43-21	<p>SECTION 310 RESIDENTIAL GROUP R</p> <p>310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the <i>International Residential Code</i>. Group R occupancies not constructed in accordance with the <i>International Residential Code</i> as permitted by Sections 310.4.1 and 310.4.2 shall comply with Section 420.</p> <p>Revise as follows:</p> <p>310.2 Residential Group R-1. Residential Group R-1 occupancies containing <i>sleeping units</i> where the occupants are primarily <i>transient</i> in nature, including:</p> <ul style="list-style-type: none"> ● <i>Boarding houses (transient)</i> with more than 10 occupants ● <i>Congregate living facilities (transient)</i> with more than 10 occupants ● <i>Hotels (transient)</i> ● <i>Motels (transient)</i> ● <u>Lodging houses with more than 5 guest rooms</u> <p>310.3 Residential Group R-2. Residential Group R-2 occupancies containing <i>sleeping units</i> or more than two <i>dwelling units</i> where the occupants are primarily permanent in nature, including:</p> <ul style="list-style-type: none"> ● Apartment houses ● <i>Congregate living facilities (nontransient)</i> with more than 16 occupants <ul style="list-style-type: none"> ○ <i>Boarding houses (nontransient)</i> ○ Convents ○ <i>Dormitories</i> ○ Fraternities and sororities ○ Monasteries ● Hotels (nontransient) <u>with more than 10 occupants five guest rooms</u> 		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<ul style="list-style-type: none"> • <i>Live/work units</i> • Motels (nontransient) <u>with more than 10 occupants five guest rooms</u> • Vacation timeshare properties <p>310.4 Residential Group R-3. Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:</p> <ul style="list-style-type: none"> • Buildings that do not contain more than two <i>dwelling units</i> • Care facilities that provide accommodations for five or fewer persons receiving care • <i>Congregate living facilities</i> (nontransient) with 16 or fewer occupants <ul style="list-style-type: none"> ◦ <i>Boarding houses</i> (nontransient) ◦ Convents ◦ <i>Dormitories</i> ◦ Fraternities and sororities ◦ Monasteries • <i>Congregate living facilities</i> (transient) with 10 or fewer occupants <ul style="list-style-type: none"> ◦ <i>Boarding houses</i> (transient) • <i>Lodging houses</i> (transient) with five or fewer <i>guest rooms</i> and 10 or fewer occupants • <u>Hotels (nontransient) with 10 or fewer occupants</u> five or fewer <i>guest rooms</i> • <u>Motels (nontransient) with 10 or fewer occupants</u> five or fewer <i>guest rooms</i> <p>310.4.1 Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the <i>International Residential Code</i> provided an <i>automatic sprinkler system</i> is installed in accordance with Section 903.3.1.3 or Section P2904 of the <i>International Residential Code</i>.</p> <p>Revise as follows:</p> <p>310.4.2 Lodging houses. Owner-occupied <i>lodging houses</i> with five or fewer <i>guest rooms</i> and 10 or fewer total occupants shall be permitted to be constructed in accordance with the <i>International Residential Code</i>, provided that an <i>automatic sprinkler system</i> is installed in accordance with Section 903.3.1.3 or Section P2904 of the <i>International Residential Code</i>.</p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
G44-21 Part I	<p>Revise as follows:</p> <p>310.2 Residential Group R-1. Residential Group R-1 occupancies containing <u>sleeping units</u> or more than two <u>dwelling units</u> where the occupants are primarily <i>transient</i> in nature, including:</p> <ul style="list-style-type: none"> ▪..... <p>420.2 Separation walls. Walls separating <i>dwelling units</i> in the same building, walls separating <i>sleeping units</i> in the same building, <u>walls separating dwelling units from sleeping units in the same building</u>, and walls separating <i>dwelling</i> or <i>sleeping units</i> from other occupancies contiguous to them in the same building shall be constructed as <i>fire partitions</i> in accordance with Section 708.</p> <p>420.3 Horizontal separation. Floor assemblies separating <i>dwelling units</i> in the same buildings, floor assemblies separating <i>sleeping units</i> in the same building, <u>floor assemblies separating dwelling units from sleeping units in the same building</u>, and floor assemblies separating <i>dwelling</i> or <i>sleeping units</i> from other occupancies contiguous to them in the same building shall be constructed as <i>horizontal assemblies</i> in accordance with Section 711.</p> <p>716.2.6.1 Door closing. <i>Fire doors</i> shall be latching and self- or automatic-closing in accordance with this section.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <i>Fire doors</i> located in common walls separating <u>dwelling units</u> or <u>sleeping units</u> in Group R-1 shall be permitted without automatic- or <i>self-closing</i> devices. 2. The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation. <p>1010.1.2 Egress door types. Egress doors shall be of the side-hinged swinging door, pivoted door, or <i>balanced door</i> types.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. 8. Doors serving a bathroom within an <u>individual dwelling unit</u> or sleeping unit in Group R-1. 9. <p>1103.2.11 Residential Group R-1. Buildings of Group R-1 containing not more than <u>five dwelling units</u> and sleeping units</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>in aggregate for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter.</p> <p>E104.2.1 Transient lodging. In transient lodging facilities, <u>dwelling units</u> or sleeping units with accessible communication features shall be provided in accordance with Table E104.2.1. Units required to comply with Table E104.2.1 shall be dispersed among the various classes of units.</p>					
G44-21 Part II	<p>Revise as follows:</p> <p>[F] 403.4.7 Smoke removal. To facilitate smoke removal in post-fire salvage and overhaul operations, buildings and structures shall be equipped with natural or mechanical <i>ventilation</i> for removal of products of combustion in accordance with one of the following:</p> <ol style="list-style-type: none"> 1. Easily identifiable, manually operable windows or panels shall be distributed around the perimeter of each floor at not more than 50- foot (15 240 mm) intervals. The area of operable windows or panels shall be not less than 40 square feet (3.7 m²) per 50 linear feet (15 240 mm) of perimeter. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. In Group R-1 occupancies, each <i>dwelling unit, sleeping unit</i> or suite having an <i>exterior wall</i> shall be permitted to be provided with 2 square feet (0.19 m²) of venting area in lieu of the area specified in Item 1. 2. Windows shall be permitted to be fixed provided that glazing can be cleared by fire fighters. 2. Mechanical air-handling equipment providing one exhaust air change every 15 minutes for the area involved. Return and exhaust air shall be moved directly to the outside without recirculation to other portions of the building. 3. Any other <i>approved</i> design that will produce equivalent results. 		X			Clarification.
G44-21 Part III	<p>Revise as follows:</p> <p>TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a (See Sections 403.1.1 and 403.2)</p> <p>Portions of table not shown remain unchanged.</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
7	Residential	Hotels, motels, boarding houses (transient)	1 per dwelling or sleeping unit		1 per dwelling or sleeping unit		1 per dwelling or sleeping unit	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Apartment house	1 per dwelling or sleeping unit		1 per dwelling or sleeping unit		1 per dwelling or sleeping unit	—	1 kitchen sink per dwelling unit, 1 automatic clothes washer connection per 20 dwelling units.
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit, 1 automatic clothes washer connection per dwelling unit.
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

606.2 Location of shutoff valves. Shutoff valves shall be installed in the following locations:

1. On the fixture supply to each plumbing fixture other than bathtubs and showers in one- and two-family residential *occupancies*, and other than in individual dwelling or sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar *occupancies*.
2. On the water supply pipe to each sillcock.
3. On the water supply pipe to each appliance or mechanical equipment.

G44-21 Part IV

Revise as follows:

MOTEL, HOTEL.

Any building containing six or more dwelling units or sleeping units in aggregate intended or designed to be used, or that are used, rented or hired out to be occupied, or that are occupied for sleeping purposes by guests.

TABLE 801.2.1 OFF-STREET PARKING SCHEDULE

USE	NUMBER OF PARKING SPACES REQUIRED
Assembly	1 per 300 gross square feet
Dwelling unit	2 per dwelling unit
Health club	1 per 100 gross square feet
Hotel/motel	1 per <u>dwelling or sleeping unit</u> plus 1 per 500 square feet of common area
Industry	1 per 500 square feet
Medical office	1 per 200 gross square feet
Office	1 per 300 gross square feet
Restaurant	1 per 100 gross square feet
Retail	1 per 200 gross square feet
School	1 per 3.5 seats in assembly rooms plus 1 per faculty member
Warehouse	1 per 500 gross square feet

X

Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	For SI: 1 square foot = 0.0929 m ² .					
G45-21	<p>Revise as follows:</p> <p>310.3 Residential Group R-2. Residential Group R-2 occupancies containing <i>sleeping units</i> or more than two <i>dwelling units</i> where the occupants are primarily permanent in nature, including:</p> <ul style="list-style-type: none"> • Apartment houses • <i>Congregate living facilities</i> (nontransient) with more than 16 occupants <ul style="list-style-type: none"> ◦ <i>Boarding houses (nontransient)</i> ◦ Convents ◦ <i>Dormitories</i> ◦ <u>Emergency services living quarters</u> ◦ Fraternities and sororities ◦ Monasteries • Hotels (nontransient) • <i>Live/work units</i> • Motels (nontransient) • Vacation timeshare properties <p>310.4 Residential Group R-3. Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:</p> <ul style="list-style-type: none"> • Buildings that do not contain more than two <i>dwelling units</i> • Care facilities that provide accommodations for five or fewer persons receiving care • <i>Congregate living facilities</i> (nontransient) with 16 or fewer occupants <ul style="list-style-type: none"> ◦ <i>Boarding houses (nontransient)</i> ◦ Convents ◦ <i>Dormitories</i> ◦ <u>Emergency services living quarters</u> ◦ Fraternities and sororities ◦ Monasteries • <i>Congregate living facilities (transient)</i> with 10 or fewer occupants <ul style="list-style-type: none"> ◦ <i>Boarding houses (transient)</i> • <i>Lodging houses (transient)</i> with five or fewer <i>guest rooms</i> and 10 or fewer occupants 		X			Clarification.
G46-21	Revise as follows:		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>310.4 Residential Group R-3. Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:</p> <ul style="list-style-type: none"> • Buildings that do not contain more than two <i>dwelling units</i> • Care facilities that provide accommodations for five or fewer persons receiving care • <i>Congregate living facilities</i> (nontransient) with 16 or fewer occupants <ul style="list-style-type: none"> ◦ <i>Boarding houses</i> (nontransient) ◦ Convents ◦ <i>Dormitories</i> ◦ Fraternities and sororities ◦ Monasteries • <i>Congregate living facilities</i> (transient) with 10 or fewer occupants <ul style="list-style-type: none"> ◦ <i>Boarding houses</i> (transient) • <i>Lodging houses</i> (transient) with five or fewer <i>guest rooms</i> and 10 or fewer occupants <p>4.3 Lodging houses. Owner-occupied <i>lodging houses</i> with five or fewer <i>guest rooms</i> and 10 or fewer total occupants shall be permitted to be constructed in accordance with <u>this code or the International Residential Code</u>, provided that facilities constructed using the <u>International Residential Code</u> shall be <u>protected by</u> that an <i>automatic sprinkler system</i> is installed in accordance with Section 903.3.1.3 or Section P2904 of the <i>International Residential Code</i>.</p>				-	
G48-21	<p>Revise as follows:</p> <p>311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:</p> <ul style="list-style-type: none"> • <u><i>Aerosol products</i>, Levels 2 and 3, <i>aerosol cooking spray</i>, <i>plastic aerosol 3</i> (PA3)</u> <p>.....</p>		X			Clarification.
G52-21	<p>Revise as follows:</p> <p>402.8.5 Distance to exits. Within each individual tenant space in a <i>covered or open mall building</i>, the distance of travel from any point to an <i>exit</i> or entrance to the <i>mall</i> shall be not greater than 200 feet (60 960 mm).</p> <p>The distance of travel from any point within a <i>mall</i> of a <i>covered mall building</i> to an <i>exit</i> shall be not greater than 200 feet (60 960 mm). The maximum distance of travel from any point within an</p>		X			Adds design option.

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		Decrease	Neutral	Increase		
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	<i>open mall to an exit or to the perimeter line of the open mall building shall be not greater than 200 feet (60 960 mm).</i>					
	<p>Add new definition as follows: SPRINKLER EXPRESS RISER. A vertical pipe used to supply water to sprinkler systems in a multiple story building.</p> <p>VERTICAL WATER SUPPLY ZONE. A vertical fire protection zone within the standpipe system or group of floors supplied by a single sprinkler express riser in a high-rise building established by pressure limitations based on the design.</p> <p>SECTION 403 HIGH-RISE BUILDINGS Revise as follows: [F] 403.3.1 Number of sprinkler risers and system design. Each sprinkler system zone in buildings that are more than 420 feet (128 m) in building height shall be supplied by not fewer than two risers. Each riser shall supply sprinklers on alternate floors. If more than two risers are provided for a zone, sprinklers on adjacent floors shall not be supplied from the same riser. The number of sprinkler risers and design shall comply with Section 403.3.1.1 or 403.3.1.2 based on building height. 403.3.1.1 Buildings 420 feet (36.5 m) or less in height. In buildings 420 feet (36.5 m) or less in height, sprinkler systems shall be supplied by a single standpipe or <i>sprinkler express riser</i> within each <i>vertical water supply zone</i>. 403.3.1.2 Buildings over 420 feet (128 m) in height. In buildings over 420 feet (128 m) in height, a minimum of two standpipes or <i>sprinkler express risers</i> shall supply <i>automatic sprinkler systems</i> within each <i>vertical water supply zone</i>. Each standpipe or <i>sprinkler express riser</i> shall supply <i>automatic sprinkler systems</i> on alternating floors within the <i>vertical water supply zone</i> such that two adjacent floors are not supplied from the same riser. [F] 403.3.1.1 403.3.1.3 Riser location. Standpipes or <i>sprinkler express risers</i> shall be placed in <i>interior exit stairways</i> and <i>ramps</i> that are remotely located in accordance with Section 1007.1.</p>	X			Reduces design and construction cost depending on building height.	Clarification.
G58-21	<p>Revise as follows: [F] 403.3.3 Secondary water supply. An <i>automatic</i> secondary on-site water supply having a capacity not less than the</p>		X			Clarification.

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	hydraulically calculated sprinkler demand, including the hose stream requirement <u>in accordance with Section 903.3.1.1</u> , shall be provided for <i>high-rise buildings</i> assigned to <i>Seismic Design Category C, D, E or F</i> as determined by Section 1613. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the <i>automatic sprinkler system</i> . The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13 <u>Section 903.3.1.1</u> .					
G59-21	<p>Revise as follows:</p> <p>403.5.3.1 Stairway communication system. A telephone or other two-way communications system connected to an <i>approved constantly attended station</i> shall be provided at not less than every fifth floor in each <i>stairway</i> where the doors to the <i>stairway</i> are locked. <u>Systems shall be listed in accordance with UL 2525 and installed in accordance with NFPA 72, or an equivalent standard acceptable to the authority having jurisdiction.</u></p> <p>1009.8.1 System requirements. Two-way communication systems shall provide communication between each required location and the <i>fire command center</i> or a central control point location <i>approved</i> by the fire department. Where the central control point is not a <i>constantly attended location</i>, the two-way communication system shall have timed, automatic telephone dial-out capability that provides two-way communication with an approved supervising station or <u>emergency services 9-1-1</u>. The two-way communication system shall include both audible and visible signals. <u>Systems shall be listed in accordance with UL 2525 and installed in accordance with NFPA 72, or an equivalent standard acceptable to the authority having jurisdiction.</u></p> <p>Add new standard(s) as follows: <u>UL 2525-2020 Two-Way Emergency Communications systems for Rescue Assistance</u></p>			X		Monitoring integrity of communication system on accessible floors for rescue purposes
G61-21	<p>Revise as follows:</p> <p>403.5.3 Stairway door operation. <i>Stairway</i> doors other than the exit discharge doors shall be permitted to be locked from the <i>stairway</i> side. <i>Stairway</i> doors that are locked from the <i>stairway</i> side shall be capable of being unlocked simultaneously</p>		X			Increased safety,

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	<p>without unlatching when upon a <u>one any of the following conditions occur:</u></p> <ol style="list-style-type: none"> 1. <u>Shall unlock individually or simultaneously upon a signal from the fire command center.</u> 2. <u>Shall unlock simultaneously upon activation</u> Activation of a fire alarm signal in an area served by the stairway. 3. <u>Shall unlock upon failure</u> Failure of the power supply to the lock or the locking system. 					
G62-21	<p>Revise as follows:</p> <p>404.6 Enclosure of atriums. <i>Atrium</i> spaces shall be separated from adjacent spaces by a 1-hour <i>fire barrier</i> constructed in accordance with Section 707 or a <i>horizontal assembly</i> constructed in accordance with Section 711, or both.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. A <i>fire barrier</i> is not required where a glass wall forming a <i>smoke partition</i> is provided. The glass wall shall comply with all of the following: <ol style="list-style-type: none"> 1.1. <i>Automatic</i> sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the <i>atrium</i> side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction; 1.2. The glass wall shall be installed in a gasketed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and 1.3. Where glass doors are provided in the glass wall, they shall be either <i>self-closing</i> or automatic-closing. 2. A <i>fire barrier</i> is not required where a glass-block wall assembly complying with Section 2110 and having a $3/4$-hour <i>fire protection rating</i> is provided. 3. A <i>fire barrier</i> is not required between the <i>atrium</i> and the adjoining spaces of up to three floors of the <i>atrium</i> provided that such spaces are accounted for in the design of the smoke control system. 		X		Clarification.	

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>4. <u>In other than Group I-2, and Group I-1, Condition 2, a fire barrier is not required between the atrium and the adjoining spaces where the atrium is not required to be provided with a smoke control system.</u></p> <p>5. <u>In Group I-2 and Group I-1, Condition 2, a fire barrier is not required between the atrium and the adjoining spaces, other than care recipient sleeping or treatment rooms, for up to three stories of the atrium provided that such spaces are accounted for in the design of the smoke control system and are not providing access to care recipient sleeping or treatment rooms.</u></p> <p>5.6. <u>A horizontal assembly is not required between the atrium and openings for escalators complying with Section 712.1.3.</u></p> <p>6.7. <u>A horizontal assembly is not required between the atrium and openings for exit access stairways and ramps complying with Item 4 of Section 1019.3.</u></p>					
G63-21	<p>Revise as follows:</p> <p>404.10 Exit stairways in an atrium. Where an <i>atrium</i> contains an <i>interior exit stairway</i> all the following shall be met:</p> <ol style="list-style-type: none"> The entry to the <i>exit stairway</i> is the edge of the closest riser of the <i>exit stairway</i>. The entry of the <i>exit stairway</i> shall have access from a minimum of two directions. The distance between the entry to an <i>exit stairway</i> in an <i>atrium</i> and the entrance to a minimum of one <i>exit stairway</i> enclosed in accordance with Section 1023.2 shall comply with the separation required by Section 1007.1.1. <i>Exit access</i> travel distance shall be measured to the closest riser of the <i>exit stairway</i>. Not more than 50 percent of the <i>exit stairways</i> shall be located in the same <i>atrium</i>. <u>The discharge from the exit stairway at the level of exit discharge shall comply with Section 1028.1.</u> 		X			Clarification.
G65-21	<p>Revise as follows:</p> <p>406.2.1 Automatic door openers operators and vehicular gates. Where provided, <u>Automatic automatic garage door openers operators, and automatic rolling door operators or systems,</u> shall be <i>listed and labeled</i> in accordance with UL 325. Where provided, <i>automatic vehicular gates</i> shall comply with Section 3110.</p>		X			Clarification.

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G71-21	<p>Revise as follows:</p> <p>407.4.4 Group I-2 care suites. <i>Care suites</i> in Group I-2 shall comply with Sections 407.4.4.1 through 407.4.4.4 407.4.4.5 and either Section 407.4.4.5 407.4.4.6 or 407.4.4.6 407.4.4.7.</p> <p>407.4.4.3 Access to corridor. Every <i>care suite</i> shall have a door leading directly to an <i>exit access corridor</i> or <i>horizontal exit</i>. Movement from habitable rooms within a <i>care suite</i> shall not require more than 100 feet (30 480 mm) of travel within the <i>care suite</i> to a door leading to the <i>exit access corridor</i> or <i>horizontal exit</i>. Where a <i>care suite</i> is required to have more than one <i>exit access</i> door by Section 407.4.4.5.2 or 407.4.4.6.2, the additional door shall lead directly to an <i>exit access corridor</i>, <i>exit</i> or an adjacent suite.</p> <p>Add new text as follows:</p> <p>407.4.4.4 Circulation paths Circulating space within a care suite. The circulation paths circulating space within a care suite providing the access to the door doors required in Section 407.4.4.3 shall have a minimum width of 36 inches (914 mm) and shall not be required to meet the requirements for a corridor or an aisle.</p> <p>Revise as follows:</p> <p>407.4.4.4 407.4.4.5 Doors within care suites. Doors in <i>care suites</i> serving habitable rooms shall be permitted to comply with one of the following:</p> <ol style="list-style-type: none"> 1. Manually operated horizontal sliding doors permitted in accordance with Exception 9 to Section 1010.1.2. 2. <i>Power-operated doors</i> permitted in accordance with Section 1010.1.2, Exception 7. 3. <i>Means of egress</i> doors complying with Section 1010. 		X			Clarification.
G76-21	<p>Revise as follows:</p> <p>410.2.1.1 Stage height and area. Stage areas shall be measured to include the entire performance area and adjacent backstage and support areas not separated from the performance area by fire-resistance-rated construction. <i>Stage</i> height shall be measured from the lowest point on the <i>stage</i> floor to the highest point <u>of the underside</u> of the roof or floor deck above the <i>stage</i>.</p>		X			Clarification.
G79-21	<p>Revise as follows:</p> <p>410.2.4 Proscenium wall. Where the <i>stage</i> height is greater than 50 feet (15 240 mm), all portions of the <i>stage</i> shall be completely separated from the seating area by a <i>proscenium wall</i> with not</p>		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>less than a 2-hour <i>fire-resistance rating</i> extending continuously from the foundation to the roof.</p> <p>Exception: Where a stage is located in a building of Type I construction, the proscenium wall is permitted to extend continuously from a minimum 2-hour fire-resistance-rated floor slab of the space containing the stage to the roof or a minimum 2-hour fire-resistance-rated floor deck above.</p>					
G82-21	<p>Revise as follows:</p> <p>410.4.1 Separation from stage. The <i>stage</i> shall be separated from dressing rooms, scene docks, property rooms, workshops, storerooms, and compartments appurtenant <u>contiguous</u> to the <i>stage</i> and other parts of the building by <i>fire barriers</i> constructed in accordance with Section 707 or <i>horizontal assemblies</i> constructed in accordance with Section 711, or both. The <i>fire-resistance rating</i> shall be not less than 2 hours for <i>stage</i> heights greater than 50 feet (15 240 mm) and not less than 1 hour for <i>stage</i> heights of 50 feet (15 240 mm) or less.</p> <p>410.4.2 Separation from each other. Dressing rooms, scene docks, property rooms, workshops, storerooms, and compartments appurtenant <u>contiguous</u> to the <i>stage</i> shall be separated from each other by not less than 1-hour <i>fire barriers</i> constructed in accordance with Section 707 or <i>horizontal assemblies</i> constructed in accordance with Section 711, or both.</p>		X			Clarification.
G84-21	<p>Revise as follows:</p> <p>[F] 410.6 Automatic sprinkler system. <i>Stages</i> shall be equipped with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1. Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the <i>stage</i>. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such <i>stages</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Sprinklers are not required under catwalks and galleries <u>under the maximum widths as permitted by NFPA 13 when they are permitted to be omitted in accordance with Section 903.1.1.</u> 		X			Clarification.
G85-21	<p>Delete without substitution:</p> <p>[F] 410.7 Standpipes. <i>Standpipe systems</i> shall be provided in accordance with Section 905.</p>	X			Minimal.	Clarification.

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G86-21 Part I	<p>Revise as follows: [General. <i>Special amusement areas</i> having an <i>occupant load</i> of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Sections 411.1 through 411.7. <i>Special amusement areas</i> having an <i>occupant load</i> of less than 50 shall comply with the requirements for a Group B occupancy and Sections 411.1 through 411.7.</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> Special amusement areas that are without walls or a roof and constructed to prevent the accumulation of smoke need <u>are not required to comply with this section.</u> <u>Puzzle rooms provided with a means of egress that is unlocked, readily identifiable and always available are not required to comply with this section.</u> <p>Delete without substitution: 411.5 Puzzle room exiting. <i>Puzzle room exiting shall comply with one of the following:</i></p> <ol style="list-style-type: none"> Exiting in accordance with Chapter 10. An alternative design <i>approved by the building official.</i> Exits shall be open and readily available upon activation by the <i>automatic fire alarm system, automatic sprinkler system,</i> and a manual control at a <i>constantly attended location.</i> <p>Revise as follows: 411.4 411.6 Exit marking. Exit signs shall be installed at the required <i>exit or exit access doorways</i> serving <i>special amusement areas</i> in accordance with this section and Section 1013. <i>Approved</i> directional exit markings shall be provided. Where mirrors, mazes or other designs are utilized that disguise the path of egress travel such that they are <u>the path of egress travel is</u> not apparent, <i>approved</i> and <i>listed</i> low-level exit signs that comply with Section 1013.5, and directional path markings <i>listed</i> in accordance with UL 1994, shall be provided and located not more than 8 inches (203 mm) above the walking surface and on or near the path of egress travel. Such markings shall become visible in an emergency. The directional exit marking shall be activated by the <i>automatic smoke detection system</i> and the <i>automatic sprinkler system</i> in accordance with Section 411.3.2. 907.2.12.</p> <p>411.6.1 411.4.1 Photoluminescent exit signs. Where <i>photoluminescent exit signs</i> are installed, <u>such signs shall be</u></p>		X			Clarification.

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Sub Code:										
	<p><i>listed</i>, and the activating light source and viewing distance shall be in accordance with the listing and markings on of the signs.</p> <p>411.4 411.7 Interior finish. The interior <i>Interior wall and ceiling finish materials</i> in special amusement areas shall be meet the <i>flame spread index</i> and <i>smoke-developed index</i> requirements for Class A in accordance with Section 803.1.</p> <p>411.5 Flammable decorative materials. <i>Flammable decorative materials</i> shall comply with Section 806.</p> <p>TABLE 903.2.11.6 ADDITIONAL REQUIRED PROTECTION SYSTEMS Portions of table not shown remain unchanged.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>SECTION</th> <th>SUBJECT</th> </tr> </thead> <tbody> <tr> <td>411.3</td> <td>Special amusement <u>buildings areas</u></td> </tr> </tbody> </table>	SECTION	SUBJECT	411.3	Special amusement <u>buildings areas</u>					
SECTION	SUBJECT									
411.3	Special amusement <u>buildings areas</u>									
G86-21 Part II	<p>Revise as follows:</p> <p>411.3 Detection and alarm systems Fire alarm system. Buildings containing <i>special amusement areas</i> shall be equipped <u>throughout</u> with an <i>automatic smoke detection system</i> and an <i>emergency voice/alarm communications system</i> in accordance with Section 907—907.2.13. <u>Pre-signal alarms and alarm activation shall comply with Sections 411.3.1 and 411.3.2, and <i>emergency voice/alarm communications</i> systems shall comply with Section 411.3.3.</u></p> <p>Add new text as follows:</p> <p>411.3.1 Alarm pre-signal. <u>Activation of any single smoke detector, the <i>automatic sprinkler system</i> or any other single automatic fire detection device shall immediately initiate an audible and visible alarm at a constantly attended location at the <i>special amusement area</i> from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 411.3.2.</u></p> <p>411.3.2 Alarm activation. <u>Activation of two or more smoke detectors, a single smoke detector equipped with an alarm verification feature, two or more other approved fire detection devices, the <i>automatic sprinkler system</i>, or a manual control located at the constantly attended station required by Section 411.3.1 shall automatically accomplish all of the following:</u></p> <ol style="list-style-type: none"> <u>1. Automatically illuminate the means of egress with an illumination level not less than 1 footcandle (11 lux) at the walking surface level.</u> 		X			Clarification.				

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	<p>2. <u>Stop conflicting or confusing sounds and visual distractions.</u></p> <p>3. <u>Activate approved directional exit markings.</u></p> <p>4. <u>Activate a prerecorded message, audible throughout the special amusement area, instructing occupants to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound that is distinct from other sounds used during normal operation of the special amusement area .</u></p> <p>Revise as follows: [F] 411.4 411.3.3 Emergency voice/alarm communications system. <i>An emergency voice/alarm communications system shall be provided in accordance with Section 907.2.12 complying with Section 907.5.2.2 shall be installed in and audible throughout special amusement areas. The emergency voice/alarm communications system is allowed to also serve as a public address system.</i></p> <p>Modify as follows: 907.2.12 Special amusement areas. <i>Fire detection and alarm systems shall be provided in special amusement areas in accordance with Section 914.7 914.7.2.</i></p>					
G91-21	<p>Delete without substitution: [F] 415.11.1.1.2 Hazardous production materials. <i>The maximum quantities of hazardous production materials (HPM) stored in a single fabrication area shall not exceed the maximum allowable quantities per control area established by Table 307.1(1) and Table 307.1(2).</i></p>		X			Clarification.
C93-21	<p>Revise as follows: [F] TABLE 414.5.1 EXPLOSION CONTROL REQUIREMENTS^{a, h} Portions of table not shown remain unchanged. j. <i>Does not apply to consumer fireworks, 1.4G.</i> [F] TABLE 415.6.5 DETACHED BUILDING REQUIRED Portions of table not shown remain unchanged. e. <i>Does not apply to consumer fireworks, 1.4G.</i></p>		X			Clarification.
C94-21	<p>Revise as follows: [BG] STORM SHELTER. <i>A building, structure or portions thereof, constructed in accordance with ICC 500 and designated for use during a severe wind storm event, such as a hurricane or tornado hurricanes, tornadoes or other severe windstorms.</i></p> <p>Revise as follows:</p>		X			Editorial.

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		Decrease	Neutral	Increase		
	<p>423.1 General. This section applies to the <u>design and construction</u> of storm shelters constructed as separate detached buildings or constructed as rooms or spaces within buildings for the purpose of providing protection from storms that produce high winds, such as tornadoes, and hurricanes, <u>and other severe windstorms</u> during the storm. This section specifies where <i>storm shelters</i> are required and provides requirements for the design and construction of <i>storm shelters</i>. Design of facilities for use as emergency shelters after the storm are outside the scope of ICC 500 and shall comply with Table 1604.5 as a <i>Risk Category IV Structure</i>.</p> <p>423.3.1 Dedicated storm shelters. A facility designed to be occupied solely as a <i>storm shelter</i> shall be classified as Group A-3 for the determination of requirements other than those covered in ICC 500.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. The occupancy category for dedicated <i>storm shelters</i> with an a <u>design occupant load capacity</u> of fewer less than 50 persons as determined in accordance with ICC 500 shall be in accordance with Section 303. 2. The occupancy category for a dedicated residential <i>storm shelter</i> shall be the Group R occupancy served. <p>423.5.1 Required Design occupant capacity. The required <u>design</u> occupant capacity of the <i>storm shelter</i> shall include all of the buildings on the site and shall be the greater of the following:</p> <ol style="list-style-type: none"> 1. The total <i>occupant load</i> of the classrooms, vocational rooms and offices in the Group E occupancy. 2. The <i>occupant load</i> of the largest indoor assembly space that is associated with the Group E occupancy. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where a new building is being added on an existing Group E site, and where the new building is not of sufficient size to accommodate the required <u>design</u> occupant capacity of the <i>storm shelter</i> for all of the buildings on the site, the storm shelter shall at a minimum accommodate the required occupant capacity for the new building. 2. Where approved by the <i>building official</i>, the required <u>design</u> occupant capacity of the shelter shall be permitted to be reduced by the <u>design</u> occupant capacity of any existing <i>storm shelters</i> on the site. 					

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Sub Code:						
G95-21	<p>Add new text as follows: 423.4.1 Location. Storm shelters shall be located within the building they serve or shall be located where the maximum distance of travel from not fewer than one exterior door of each building to a door of the shelter serving that building does not exceed 1,000 feet (305 m), unless otherwise approved.</p>			X	May Increase cost where a campus has multiple buildings far apart.	Safety.
G96-21	<p>Add new text as follows: 423.4.1 Required Occupant Capacity. The required occupant capacity of the storm shelter shall include all of the critical emergency operations buildings on the site and shall be the greater of the following:</p> <ol style="list-style-type: none"> The total occupant load of offices and number of beds. The occupant load of the largest indoor assembly space. <p>Exceptions:</p> <ol style="list-style-type: none"> Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by occupant load calculation, shall be permitted to be used in the determination of the required design occupant capacity for the storm shelter. Where a new building is being added on an existing site, and where the new building is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all of the buildings on the site, the storm shelter shall at a minimum accommodate the required occupant capacity of the new building. Where approved by the building official, the required occupant capacity of the shelter shall be permitted to be reduced by the occupant capacity of any existing storm shelters on the site. 			X	Cost depends on occupancy design basis.	Establishes a basis of design for storm shelters to set a minimum size standard for designers.
G97-21	<p>Revise as follows: 423.5.1 Required occupant capacity. The required occupant capacity of the storm shelter shall include all of the buildings on the site and shall be the greater of the following:</p> <ol style="list-style-type: none"> The total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy. The occupant load of the largest indoor assembly space that is associated with the Group E occupancy. <p>Exceptions:</p>	X			Cost reduced for storm shelters for new school buildings on existing campuses that have associated assembly	Adds design options.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE									
		Decrease	Neutral	Increase											
Sub Code:															
	<ol style="list-style-type: none"> Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by occupant load calculation, shall be permitted to be used in the determination of the required design occupant capacity for the storm shelter. Where a new building is being added on an existing Group E site, and where the new building is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all of the buildings on the site, the storm shelter shall at a minimum accommodate the required occupant capacity for the new building. Where approved by the building official, the required occupant capacity of the shelter shall be permitted to be reduced by the occupant capacity of any existing storm shelters on the site. 				spaces larger than the student population.										
G99-21 Part VI	<p>Revise as follows: TABLE 1004.5 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>FUNCTION OF SPACE</th> <th>OCCUPANT LOAD FACTOR^a</th> </tr> </thead> <tbody> <tr> <td>Business areas</td> <td>150 gross</td> </tr> <tr> <td>Information Technology Equipment Facilities</td> <td>300 gross</td> </tr> <tr> <td>Concentrated business use areas</td> <td>See Section 1004.8</td> </tr> <tr> <td>Information Technology Equipment Facilities</td> <td>300 gross</td> </tr> </tbody> </table> <p>1004.8 Concentrated business use areas. The occupant load factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data processing entry centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. Where approved by the building official, the occupant load for concentrated business use areas shall be the actual occupant load, but not less than one occupant per 50 square feet (4.65 m²) of gross occupiable floor space.</p>	FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a	Business areas	150 gross	Information Technology Equipment Facilities	300 gross	Concentrated business use areas	See Section 1004.8	Information Technology Equipment Facilities	300 gross		X		Clarification.
FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a														
Business areas	150 gross														
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Concentrated business use areas	See Section 1004.8														
Information Technology Equipment Facilities	300 gross														
G99-21 Part VIII	<p>Add new definition as follows: COMPUTER ROOM. A room or portions of a building used primarily to house information technology equipment (ITE) and serving an ITE load less than or equal to 10 kW or 20 W/ft² (215 W/m²) or less of conditioned floor area.</p>		X		Clarification										

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>DATA CENTER. <u>A room or building, or portions thereof, used primarily to house information technology equipment (ITE) and serving a total ITE load greater than 10 kW and 20 W/ft² (215 W/m²) of conditioned floor area.</u></p> <p>INFORMATION TECHNOLOGY EQUIPMENT (ITE). <u>Computers, data storage, servers, and network communication equipment.</u></p> <p>INFORMATION TECHNOLOGY EQUIPMENT FACILITIES (ITEF). <u>Data centers and computer rooms used primarily to house information technology equipment.</u></p>					
G105-21	<p>Revise as follows:</p> <p>503.1.4.1 Enclosures over occupied roof areas. Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupied roof.</p> <p>Exception: Exceptions:</p> <ol style="list-style-type: none"> 1. Penthouses constructed in accordance with Section 1511.2 and towers, domes, spires and cupolas constructed in accordance with Section 1511.5. 2. Required guards <u>Elements or structures enclosing the occupied roof areas shall be permitted to be greater than 48 inches (1219 mm) above the surface of the occupied roof where the roof deck is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.</u> 		X			Increases design options.
G106-21 Part II	<p>Revise as follows:</p> <p>1015.2 Where required. <i>Guards</i> shall be located along open-sided walking surfaces, including <i>mezzanines</i>, equipment platforms, <i>aisles</i>, <i>stairs</i>, <i>ramps</i> and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Guards shall be provided and at the perimeter of the occupied portions of an occupied roofs. <i>Guards</i> shall be adequate in strength and attachment in accordance with Section 1607.9.</p> <p>Exceptions: <i>Guards</i> are not required for the following locations:</p> <ol style="list-style-type: none"> 1. 			X	Cost of occupied roofs where the edge of the occupied portion of the roof is inboard of roof edge will increase due to guard installation.	Safety
G112-21 Part I	<p>Replace as follows:</p> <p><u>APPENDIX P SLEEPING LOFTS</u></p>		X			Adds design option.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>SECTION P101 GENERAL .</p> <p>P101.1 General . <u>Where provided in Group R occupancies, sleeping lofts shall comply with the provisions of this code, except as modified by this appendix. Sleeping lofts constructed in compliance with this appendix shall be considered a portion of the story below. Such sleeping lofts shall not contribute to either the building area or number of stories as regulated by Section 503.1. The sleeping loft floor area shall be included in determining the fire area.</u></p> <p><u>The following sleeping lofts are exempt from compliance with this appendix:</u></p> <p><u>Sleeping lofts with a maximum depth of less than 3 feet (914 mm).</u></p> <p><u>Sleeping lofts with a floor area of less than 35 square feet (3.3 m²).</u></p> <p><u>Sleeping lofts not provided with a permanent means of egress.</u></p> <p>P101.2 Sleeping loft limitations . <u>Sleeping lofts shall comply with the following:</u></p> <p><u>The sleeping loft floor area shall be less than 70 square feet (6.5 m²).</u></p> <p><u>The sleeping loft ceiling height shall not exceed 7 feet (2134 mm) for more than one half of the sleeping loft floor area.</u></p> <p><u>The provisions of this appendix shall not apply to sleeping lofts that do not comply with Items 1 and 2.</u></p> <p>P101.3 Sleeping loft ceiling height . <u>The clear height below the sleeping loft floor construction shall not be less than 7 feet (2134 mm). The ceiling height above the finished floor of the sleeping loft shall not be less than 3 feet (914 mm). Portions of the sleeping loft with a sloped ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not contribute to the sleeping loft floor area.</u></p> <p>P101.4 Sleeping loft area . <u>The aggregate area of all sleeping lofts and mezzanines within a room shall comply with Section 505.2.1.</u></p> <p>Exception: <u>The area of a single sleeping loft shall not be greater than two-thirds of the area of the room in which it is located, provided that no other sleeping lofts or mezzanines are open to the room in which the sleeping loft is located.</u></p> <p>SECTION P102 DEFINITIONS .</p> <p>P102.1 General . <u>The following words and terms shall, for the purposes of this appendix, have the meanings shown herein.</u></p>	-				

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Refer to Chapter 2 of this code for general definitions.</p> <p>SLEEPING LOFT. A space on an intermediate level or levels between the floor and ceiling of a Group R occupancy dwelling or sleeping unit, open on one or more sides to the room in which the sleeping loft is located.</p> <p>SECTION P103 MEANS OF EGRESS.</p> <p>P103.1 General. Where a permanent means of egress is provided for sleeping lofts, the means of egress shall comply with Chapter 10 of this code, as modified by Sections P103.2 through P103.6.</p> <p>P103.2 Ceiling height at sleeping loft means of egress. A minimum ceiling height of 3 feet (914 mm) shall be provided for the entire width of the means of egress from the sleeping loft.</p> <p>P103.3 Stairways. Stairways providing egress from sleeping lofts shall be permitted to comply with Sections P103.3.1 through P103.3.3.</p> <p>P103.3.1 Width. Stairways providing egress from a sleeping loft shall not be less than 17 inches (432 mm) in clear width at or above the handrail. The width below the handrail shall be not less than 20 inches (508 mm).</p> <p>P103.3.2 Treads and risers. Risers for stairs providing egress from a sleeping loft shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:</p> <ol style="list-style-type: none"> The tread depth shall be 20 inches (508 mm) minus four-thirds of the riser height. The riser height shall be 15 inches (381 mm) minus three-fourths of the tread depth. <p>P103.3.3 Landings. Landings at stairways providing egress from sleeping lofts shall comply with Section 1011.6, except that the depth of landings in the direction of travel shall be not less than 24 inches (508 mm).</p> <p>P103.4 Alternating tread devices. Alternating tread devices shall be permitted as a means of egress from sleeping lofts, where the sleeping loft floor is no more than 10 feet (3048 mm) above the floor of the room to which it is open. Handrails and treads of such alternating tread devices shall comply with Section 1011.14.</p> <p>P103.5 Ship's ladders. Ship's ladders shall be permitted as a means of egress from sleeping lofts where the sleeping loft floor is no more than 10 feet (3048 mm) above the floor of the room</p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>to which it is open. Handrails and treads of such ship's ladders shall comply with Section 1011.15.</p> <p>P103.6 Ladders. Ladders shall be permitted as a means of egress from sleeping lofts where the sleeping loft floor is no more than 10 feet (3048 mm) above the floor of the room to which it is open. Such ladders shall comply with Sections P103.6.1 and P103.6.2.</p> <p>P103.6.1 Size and capacity. Ladders providing egress from sleeping lofts shall have a rung width of not less than 12 inches (305 mm), and 10-inch (254 mm) to 14-inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 300-pound (136 kg) load on any rung. Rung spacing shall be uniform within 3/8 inch (9.5 mm).</p> <p>P103.6.2 Incline. Ladders shall be inclined at 70 to 80 degrees from horizontal.</p> <p>SECTION P104 GUARDS .</p> <p>P104.1 General. Guards complying with Section 1015 of this code shall be provided at the open sides of sleeping lofts. Exception: The guard height at sleeping lofts shall be permitted to be 36 inches (914 mm) where the ceiling height of the sleeping loft is 42 inches (1067 mm) or less.</p> <p>SECTION P105 SMOKE ALARMS .</p> <p>P105.1 General . Listed single- or multiple-station smoke alarms complying with UL 217 shall be installed in all sleeping lofts.</p>					
G116-21	<p>Revise as follows:</p> <p>506.3.2 Minimum frontage distance. To qualify for an area factor increase based on frontage, the public way or open space adjacent to the building perimeter shall have a minimum distance (W) of 20 feet (6096 mm) measured at right angles from the building face to any of the following:</p> <ol style="list-style-type: none"> 1. The closest interior lot line. 2. The entire width of a street, alley or public way. 3. The exterior face of an adjacent building on the same property. <p>The frontage increase shall be based on the smallest public way or open space that is 20 feet (6096 mm) or greater, and the percentage of building perimeter having a minimum 20 feet (6096 mm) public way or open space. Not all public ways or open spaces that are 20 feet (6096 mm) or greater are required to be used to determine the frontage increase.</p>		X			Clarification.

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	<p>506.3.3 Amount of increase. The area factor increase based on frontage shall be determined in accordance with Table 506.3.3.</p> <p>Revise as follows:</p> <table border="1"> <thead> <tr> <th rowspan="2">PERCENTAGE OF BUILDING PERIMETER</th> <th colspan="4">OPEN SPACE (feet)</th> </tr> <tr> <th>0 to less than 20</th> <th>20 to less than 25</th> <th>25 to less than 30</th> <th>30 or greater</th> </tr> </thead> <tbody> <tr> <td>0 to less than 25</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>25 to less than 50</td> <td>0</td> <td>0.17</td> <td>0.21</td> <td>0.25</td> </tr> <tr> <td>50 to less than 75</td> <td>0</td> <td>0.33</td> <td>0.42</td> <td>0.50</td> </tr> <tr> <td>75 to 100</td> <td>0</td> <td>0.50</td> <td>0.63</td> <td>0.75</td> </tr> </tbody> </table> <p>a. Interpolation is permitted.</p> <p>506.3.3.1 Section 507 buildings. Where a building meets the requirements of Section 507, as applicable, except for compliance with the minimum 60-foot (18 288 mm) public way or yard requirement, the area factor increase based on frontage shall be determined in accordance with Table 506.3.3.1. <u>The frontage increase shall be based on the smallest public way or open space that is 30 feet (9144 mm) or greater, and the percentage of building perimeter having a minimum 30 feet (9144 mm) public way or open space. Not all public ways or open spaces that are 20 feet (6096 mm) or greater are required to be used to determine the frontage increase.</u></p> <p>TABLE 506.3.3.1 SECTION 507 BUILDINGS^a</p> <table border="1"> <thead> <tr> <th rowspan="2">PERCENTAGE OF BUILDING PERIMETER</th> <th colspan="6">OPEN SPACE (feet)</th> </tr> <tr> <th>30 to less than 35</th> <th>35 to less than 40</th> <th>40 to less than 45</th> <th>45 to less than 50</th> <th>50 to less than 55</th> <th>55 to less than 60 or greater</th> </tr> </thead> <tbody> <tr> <td>0 to less than 25</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>25 to less than 50</td> <td>0.29</td> <td>0.33</td> <td>0.38</td> <td>0.42</td> <td>0.46</td> <td>0.50</td> </tr> <tr> <td>50 to less than 75</td> <td>0.58</td> <td>0.67</td> <td>0.75</td> <td>0.83</td> <td>0.92</td> <td>1.00</td> </tr> <tr> <td>75 to 100</td> <td>0.88</td> <td>1.00</td> <td>1.13</td> <td>1.25</td> <td>1.38</td> <td>1.50</td> </tr> </tbody> </table> <p>a. Interpolation is permitted.</p>	PERCENTAGE OF BUILDING PERIMETER	OPEN SPACE (feet)				0 to less than 20	20 to less than 25	25 to less than 30	30 or greater	0 to less than 25	0	0	0	0	25 to less than 50	0	0.17	0.21	0.25	50 to less than 75	0	0.33	0.42	0.50	75 to 100	0	0.50	0.63	0.75	PERCENTAGE OF BUILDING PERIMETER	OPEN SPACE (feet)						30 to less than 35	35 to less than 40	40 to less than 45	45 to less than 50	50 to less than 55	55 to less than 60 or greater	0 to less than 25	0	0	0	0	0	0	25 to less than 50	0.29	0.33	0.38	0.42	0.46	0.50	50 to less than 75	0.58	0.67	0.75	0.83	0.92	1.00	75 to 100	0.88	1.00	1.13	1.25	1.38	1.50					
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G117-21	<p>Revise as follows:</p> <p>507.3 Nonsprinklered, one-story buildings. The area of a Group F-2 or S-2 building not more than one story above grade plane of any construction type, in height shall not be limited where the building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.</p>		X			Clarification.																																																																						
G122-21 Part II	<p>Revise as follows:</p> <p>2603.4 Thermal barrier. Except as provided for in Sections 2603.4.1 and 2603.9, foam plastic shall be separated from the</p>		X			Clarification.																																																																						

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Sub Code:						
	interior of a building by an approved thermal barrier of 1/2-inch (12.7 mm) <i>gypsum wallboard</i> , <i>mass timber</i> or heavy timber in accordance with Section 2304.11 602.4 or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275. Combustible concealed spaces shall comply with Section 718.					
G123-21	<p>Revise as follows:</p> <p>508.4.4.1 Construction. Required separations shall be fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, so as to completely separate adjacent occupancies. Mass timber elements serving as fire barriers or horizontal assemblies to separate occupancies in Type IV-B or IV-C construction shall be separated from the interior of the building with an approved thermal barrier consisting of gypsum board that is not less than 1/2 inch (12.7 mm) in thickness or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.</p> <p>Exception: <u>The thermal barrier shall not be required on the top of horizontal assemblies serving as occupancy separations.</u></p> <p>509.4.1.1 Type IV-B and IV-C construction. Where Table 509.1 specifies a fire-resistance-rated separation, mass timber elements serving as fire barriers or horizontal assemblies in Type IV-B or IV-C construction shall be separated from the interior of the incidental use with an approved thermal barrier consisting of gypsum board that is not less than 1/2 inch (12.7 mm) in thickness or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.</p> <p>Exception: <u>The thermal barrier shall not be required on the top of horizontal assemblies serving as incidental use separations.</u></p>	X			Noncombustible or other protection on the top of floors in required separations may not be required depending on design.	Clarification.
G125-21	<p>Revise as follows:</p> <p>508.5 Live/work units. A <u>live/work units</u> shall comply with one of the following;</p> <ol style="list-style-type: none"> 1. <u>For a live/work unit located in a building constructed in accordance with this code, both the residential and</u> 		X			Clarification.

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	<p><u>non-residential portions of the live/work unit shall comply with Sections 508.5 through 508.5.11.</u></p> <p>2. <u>For a live/work unit located in a building constructed in accordance with the International Residential Code, the non-residential portion of the live/work unit shall comply with Sections 508.5.1 through 508.5.11, and the residential portion of the live/work unit shall be constructed in accordance with the International Residential Code and Section 508.5.7.</u></p> <p>Exception: Dwelling or sleeping units that include an office that is less than 10 percent of the area of the dwelling unit are permitted to be classified as dwelling units with accessory occupancies in accordance with Section 508.2.</p>					
G126-21 Part II	<p>Revise as follows:</p> <p>[F] 508.5.7 Fire protection. The live <u>Live/work unit units in buildings constructed in accordance with this code shall comply with be provided with a monitored fire alarm system where required by Section 907.2.9 and be provided with all of the following:</u></p> <ol style="list-style-type: none"> 1. <u>An automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 903.2.8.</u> 2. <u>Smoke alarms in accordance with Section 907.2.11.</u> 3. <u>Where required by Section 907.2.9.1, a manual fire alarm system.</u> <p><u>Live/work units in buildings constructed in accordance with the International Residential Code shall be provided with an automatic sprinkler system and smoke alarms. The automatic sprinkler system shall comply with International Residential Code Section P2904, and smoke alarms shall comply with International Residential Code Section 314.</u></p>		X			Clarification.
G127-21	<p>Revise as follows:</p> <p>508.5.2 Limitations. The following shall apply to live/work areas:</p> <ol style="list-style-type: none"> 1. The <i>live/work unit</i> is permitted to be not greater than 3,000 square feet (279 m²) in area. 2. The nonresidential area is permitted to be not more than 50 percent of the area of each <i>live/work unit</i>. 3. The nonresidential area function shall be limited to the first or main floor only of the <i>live/work unit</i>. 		X			Clarification.

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Sub Code:																		
	4. Not more than five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.																	
G128-21	<p>Revise as follows: TABLE 509.1 INCIDENTAL USES Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>ROOM OR AREA</th> <th>SEPARATION AND/OR PROTECTION</th> </tr> </thead> <tbody> <tr> <td>In Group I-2, laundry rooms over 100 square feet</td> <td>1 hour and provide automatic sprinkler system</td> </tr> <tr> <td>Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces</td> <td>1 hour and provide automatic sprinkler system</td> </tr> <tr> <td>In Group I-2, physical plant maintenance shops</td> <td>1 hour and provide automatic sprinkler system</td> </tr> <tr> <td>In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 8.67 cubic feet or greater</td> <td>1 hour and provide automatic sprinkler system</td> </tr> <tr> <td>In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 50 square feet</td> <td>1 hour and provide automatic sprinkler system</td> </tr> </tbody> </table>	ROOM OR AREA	SEPARATION AND/OR PROTECTION	In Group I-2, laundry rooms over 100 square feet	1 hour and provide automatic sprinkler system	Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour and provide automatic sprinkler system	In Group I-2, physical plant maintenance shops	1 hour and provide automatic sprinkler system	In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 8.67 cubic feet or greater	1 hour and provide automatic sprinkler system	In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 50 square feet	1 hour and provide automatic sprinkler system		X			Meet Federal certification requirements.
ROOM OR AREA	SEPARATION AND/OR PROTECTION																	
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In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 8.67 cubic feet or greater	1 hour and provide automatic sprinkler system																	
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 50 square feet	1 hour and provide automatic sprinkler system																	
G130-21	<p>Revise as follows: 510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of <i>fire walls</i>, limitation of number of <i>stories</i> and type of construction where the following conditions are met:</p> <ol style="list-style-type: none"> The buildings are separated with a <i>horizontal assembly</i> having a <i>fire-resistance rating</i> of not less than 3 hours. Where vertical offsets are provided as part of a horizontal assembly contains vertical offsets, the vertical offset and the structure supporting the vertical offset shall be constructed as a fire barrier in accordance with Section 707 and shall have a fire-resistance rating of not less than 3 hours. The building below, including the <i>horizontal assembly</i> and any associated vertical offsets, is of Type IA construction. <p>Add new text as follows: 707.3.11 Horizontal separation offsets. The fire-resistance rating of a fire barrier serving as the vertical offset in a horizontal building separation shall comply with Section 510.2.</p>		X			Clarification.												
G132-21	<p>510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of <i>fire walls</i>, limitation of number of <i>stories</i> and type of construction where the following conditions are met:</p> <ol style="list-style-type: none"> 		X			Adds design options.												

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	5. The building or buildings above the <i>horizontal assembly</i> shall be permitted to have Group A ₂ , B, M, R or <u>and</u> S occupancies. 6.					
G136-21	<p>Revise as follows:</p> <p>TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)</p> <p>Portions of table not shown remain unchanged.</p> <p>b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor <u>or mezzanine</u> immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.</p>		X			Clarification.
G144-21	<p>Revise as follows:</p> <p>602.4 Type IV. Type IV construction is that type of construction in which the <i>building elements</i> are <i>mass timber</i> or noncombustible materials and have <i>fire-resistance ratings</i> in accordance with Table 601. <i>Mass timber</i> elements shall meet the <i>fire-resistance-rating</i> requirements of this section based on either the <i>fire-resistance rating</i> of the <i>noncombustible protection</i>, the <i>mass timber</i>, or a combination of both and shall be determined in accordance with Section 703.2. The minimum dimensions and permitted materials for <i>building elements</i> shall comply with the provisions of this section and Section 2304.11. <i>Mass timber</i> elements of Types IV-A, IV-B and IV-C construction shall be protected with <i>noncombustible protection</i> applied directly to the <i>mass timber</i> in accordance with Sections 602.4.1 through 602.4.3. The time assigned to the <i>noncombustible protection</i> shall be determined in accordance with Section 703.6 and comply with Section 722.7.</p> <p><i>Cross-laminated timber</i> shall be labeled as conforming to ANSI/APA PRG 320 as referenced in Section 2303.1.4.</p> <p>Exterior <i>load-bearing walls</i> and <i>nonload-bearing walls</i> shall be <i>mass timber</i> construction, or shall be of noncombustible construction.</p> <p>Exception: Exterior <i>load-bearing walls</i> and <i>nonload-bearing walls</i> of Type IV-HT Construction in accordance with Section 602.4.4.</p>		X			Editorial.

Table 6. 2024 IBC Changes Cost Impact

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		Sub Code:				
	<p>The interior <i>building elements</i>, including <i>nonload-bearing walls</i> and partitions, shall be of <i>mass timber</i> construction or of noncombustible construction.</p> <p>Exception: Interior <i>building elements</i> and <i>nonload-bearing walls</i> and partitions of Type IV-HT construction in accordance with Section 602.4.4.</p> <p>Combustible concealed spaces are not permitted except as otherwise indicated in Sections 602.4.1 through 602.4.4. Combustible stud spaces within light frame walls of Type IV-HT construction shall not be considered concealed spaces, but shall comply with Section 718. In buildings of Type IV-A, IV-B, and IV-C construction with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department <u>vehicle</u> access, up to and including 12<i>stories</i> or 180 feet (54 864 mm) above <i>grade plane</i>, <i>mass timber</i> interior exit and elevator hoistway enclosures shall be protected in accordance with Section 602.4.1.2. In buildings greater than 12 <i>stories</i> or 180 feet (54 864 mm) above <i>grade plane</i>, interior exit and elevator hoistway enclosures shall be constructed of noncombustible materials.</p>					
G147-21	<p>Revise as follows:</p> <p>602.4.2.2.1 Protected area. Interior faces of <i>mass timber</i> elements, including the inside face of exterior <i>mass timber walls</i> and <i>mass timber roofs</i>, shall be protected in accordance with Section 602.4.2.2.1.</p> <p>Exceptions: Unprotected portions of <i>mass timber</i> ceilings and walls complying with Section 602.4.2.2.4 and the following:</p> <ol style="list-style-type: none"> 1. Unprotected portions of <i>mass timber</i> ceilings and walls complying with one of the following: <ol style="list-style-type: none"> 1.1. Unprotected portions of <i>mass timber</i> ceilings, including attached beams, shall be permitted and shall be limited to an area <u>less than or equal to 20 100</u> percent of the floor area in any <i>dwelling unit</i> or <i>fire area</i>. 1.2. Unprotected portions of <i>mass timber</i> walls, including attached columns, shall be permitted and shall be limited to an area <u>less than or equal to 40</u> percent of the floor area in any <i>dwelling unit</i> or <i>fire area</i>. 1.3. Unprotected portions of both walls and ceilings of <i>mass timber</i>, including attached columns and beams, in any 	X			Depending on design will require less non-combustible materials	

Table 6. 2024 IBC Changes Cost Impact

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	<p><i>dwelling unit or fire area shall be permitted in accordance with Section 602.4.2.2.3.</i></p> <p>2. <i>Mass timber</i> columns and beams that are not an integral portion of walls or ceilings, respectively, shall be permitted to be unprotected without restriction of either aggregate area or separation from one another.</p> <p>602.4.2.2.2 Separation distance between unprotected mass timber elements. In each <i>dwelling unit or fire area</i>, unprotected portions of <i>mass timber</i> walls and ceilings shall be not less than 15 feet (4572 mm) from unprotected portions of other walls and ceilings, measured horizontally along the ceiling and from other unprotected portions of walls measured horizontally along the floor.</p>					
G148-21	<p>Revise as follows:</p> <p>602.4.2.2.2 Protected area. Interior faces of <i>mass timber</i> elements, including the inside face of exterior <i>mass timber</i> walls and <i>mass timber</i> roofs, shall be protected in accordance with Section 602.4.2.2.1.</p> <p>Exceptions: Unprotected portions of <i>mass timber</i> ceilings and walls complying with Section 602.4.2.2.4 and the following:</p> <p>1. Unprotected portions of <i>mass timber</i> ceilings and walls complying with one of the following:</p> <p>1.1. Unprotected portions of <i>mass timber</i> ceilings, including attached beams, shall be permitted and shall be limited to an area equal to 20 percent of the floor area in any <i>dwelling unit within a story</i> or <i>fire area within a story</i>.</p> <p>1.2. Unprotected portions of <i>mass timber</i> walls, including attached columns, shall be permitted and shall be limited to an area equal to 40 percent of the floor area in any <i>dwelling unit within a story</i> or <i>fire area within a story</i>.</p> <p>1.3. Unprotected portions of both walls and ceilings of <i>mass timber</i>, including attached columns and beams, in any <i>dwelling unit or fire area shall be permitted in accordance with Section 602.4.2.2.3</i>.</p> <p>2. <i>Mass timber</i> columns and beams that are not an integral portion of walls or ceilings, respectively, shall be permitted to be unprotected without restriction of either aggregate area or separation from one another.</p>		X		Clarification	
G149-21	<p>Revise as follows:</p>		X		Editorial.	

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		Decrease	Neutral	Increase		
Sub Code:						
	602.4.2.3 Floors. The floor assembly shall contain a noncombustible material not less than 1 inch (25 mm) in thickness above the <i>mass timber</i> . Floor finishes in accordance with Section 804 shall be permitted on top of the noncombustible material. <u>Except where unprotected mass timber ceilings are permitted in Section 602.4.2.2.2,</u> The the underside of floor assemblies shall be protected in accordance with Section 602.4.1.2.					
G150-21	<p>Revise as follows:</p> <p>602.4.4.3 Concealed spaces. Concealed spaces shall not contain combustible materials other than <i>building elements</i> and electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the <i>International Mechanical Code</i>. Concealed spaces shall comply with applicable provisions of Section 718. Concealed spaces shall be protected in accordance with one or more of the following:</p> <ol style="list-style-type: none"> 1. The building shall be sprinklered throughout in accordance with Section 903.3.1.1 and automatic sprinklers shall also be provided in the concealed space. 2. The concealed space shall be completely filled with noncombustible insulation. 3. <u>Combustible surfaces</u> Surfaces within the concealed space shall be fully sheathed with not less than 5/8-inch Type X gypsum board. <p>Exception: Concealed spaces within interior walls and partitions with a 1-hour or greater <i>fire-resistance rating</i> complying with Section 2304.11.2.2 shall not require additional protection.</p>		X			Editorial.
G151-21	<p>Revise as follows:</p> <p>602.4.4.4 Exterior structural members. Where a horizontal <i>fire separation distance</i> of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with Section 2304.11 shall be permitted to be used externally.</p>		X			Clarification.
G153-21	<p>Revise as follows:</p> <p>603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>1. <i>Fire-retardant-treated wood</i> <u>complying with Section 2303.2</u> shall be permitted in:</p> <p>.....</p> <p>11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a <i>corridor</i> serving an <i>occupant load</i> of 30 or more shall be permitted to be constructed of <i>fire-retardant-treated wood</i> <u>complying with Section 2303.2</u>, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.</p> <p>.....</p>					
G156-21	<p>Revise as follows:</p> <p>603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:</p> <p>.....</p> <p>28. <u>Vapor Retarders as required by Section 1404.3</u></p>		X			Clarification.
G157-21	<p>Revise as follows:</p> <p>603.1.2 Piping and plumbing fixtures. The use of combustible piping materials <u>and plumbing fixtures</u> shall be permitted where installed in accordance with the limitations of the <i>International Mechanical Code</i> and the <i>International Plumbing Code</i>.</p>	X			Plastic plumbing fixtures generally cost less	Adds design options.
G158-21	<p>1202.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1202.5, or mechanical ventilation in accordance with the <i>International Mechanical Code</i>. Where the air infiltration rate in a <i>dwelling unit</i> is less than 5 air changes per hour where tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with Section R402.4.1.2 of the International Energy Conservation Code—Residential Provisions, the <i>dwelling unit</i> <u>Dwelling units complying with the air leakage requirements of the <i>International Energy Conservation Code</i> or ASHRAE 90.1 shall be ventilated by mechanical means in accordance with Section 403 of the <i>International Mechanical Code</i>. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407 of the <i>International Mechanical Code</i>.</u></p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
G159-21	<p>Revise as follows:</p> <p>1202.3 Unvented attic and unvented enclosed rafter assemblies. Unvented <i>attics</i> and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all of the following conditions are met:</p> <p>1.</p> <p>5. Insulation shall comply with either Item 5.1 or 5.2, and additionally Item 5.3.</p> <p>5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.</p> <p>5.1.1. Where only <i>air-impermeable insulation</i> is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.</p> <p>5.1.2. Where air-permeable insulation is provided inside the building thermal envelope, it shall be installed in accordance with Item 5.1.1. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R-values <u>R-value percentages</u> in Table 1202.3 for condensation control.</p> <p>5.1.3. Where both air-impermeable and air-permeable insulation are provided, the <i>air-impermeable insulation</i> shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the R-values <u>R-value percentages</u> in Table 1202.3 for condensation control. The <i>air-permeable insulation</i> shall be installed directly under the <i>air-impermeable insulation</i>.</p> <p>5.1.4.....</p> <p>5.2</p>		X			Clarification.
C160-21	<p>Revise as follows:</p> <p>1202.3 Unvented attic and unvented enclosed rafter assemblies. Unvented <i>attics</i> and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside</p>			X	Minimal	

Table 6. 2024 IBC Changes Cost Impact

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		Sub Code:				
	<p>of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all of the following conditions are met:</p> <p>1.</p> <p>5.2 In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented attics shall meet the following requirements:</p> <p>5.2.2. The port area shall be greater than or equal to $\frac{1}{600}$ $\frac{1}{150}$ of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.</p> <p>5.2.3</p>					
C169-21	<p>Revise as follows:</p> <p>1206.2 Airborne sound. Walls, partitions and floor-ceiling assemblies separating <i>dwelling units</i> and <i>sleeping units</i> from each other or from public or service areas shall have a sound transmission class of not less than 50 where tested in accordance with ASTM E90, or have a Normalized Noise Isolation Class (NNIC) rating of not less than 45 if field tested, in accordance with ASTM E336 for airborne noise. Alternatively, the sound transmission class of walls, partitions and floor-ceiling assemblies shall be established by engineering analysis based on a comparison of walls, partitions and floor-ceiling assemblies having sound transmission class ratings as determined by the test procedures set forth in ASTM E90. <u>Engineering analysis shall be performed by a registered design professional.</u> Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to entrance doors; however, such doors shall be tight fitting to the frame and sill.</p> <p>1206.3 Structure-borne sound. Floor-ceiling assemblies between <i>dwelling units</i> and <i>sleeping units</i> or between a <i>dwelling unit</i> or <i>sleeping unit</i> and a public or service area within the structure shall have an impact insulation class rating of not less than 50 where tested in accordance with ASTM E492, or have a Normalized Impact Sound Rating (NISR) of not less than 45 if field</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

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		Sub Code:				
	tested in accordance with ASTM E1007. Alternatively, the impact insulation class of floor-ceiling assemblies shall be established by engineering analysis based on a comparison of floor-ceiling assemblies having impact insulation class ratings as determined by the test procedures in ASTM E492. <u>Engineering analysis shall be performed by a registered design professional.</u>					
G171-21	<p>Add new text as follows: 1208.3 Dwelling unit size. Dwelling units shall have a minimum of 190 square feet (17.7 m²) of habitable space.</p> <p>Revise as follows: 1208.4 1208.3 Room area. Every <i>dwelling unit</i> shall have not less than one room that shall have not less than 120 square feet (11.2 m²) of <i>net floor area</i>. <u><i>Sleeping units and</i> other habitable rooms of a <i>dwelling unit</i> shall have a <i>net floor area</i> of not less than 70 square feet (6.5 m²).</u></p> <p>Exception: Kitchens are not required to be of a minimum floor area.</p> <p>1208.5 1208.4 Efficiency dwelling units. <i>Efficiency dwelling units</i> shall conform to the requirements of the code except as modified herein:</p> <ol style="list-style-type: none"> The unit <u>unit's habitable space</u> shall have a living room of not less than 190 square feet (17.7 m²) of floor area <u>comply with Sections 1208.1 through 1208.4.</u> The unit shall be provided with a separate closet. For other than <i>Accessible</i>, Type A and Type B dwelling units, the unit shall be provided with a kitchen sink, cooking appliance and refrigerator, each having a clear working space of not less than 30 inches (762 mm) in front. Light and <i>ventilation</i> conforming to this code shall be provided. The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower. 	X			Cost decrease because a 1-bedroom unit will be treated the same as an EDU as far as size is concerned.	Clarification.
G173-21	<p>Add new text as follows: SECTION 1211 UV GERMICIDAL IRRADIATION SYSTEMS 1211.1 General. <u>Where ultraviolet (UV) germicidal irradiation systems are provided they shall be listed and labeled in accordance with UL 8802 and installed in accordance with their listing and the manufacturer's instruction.</u></p> <p>Revise as follows: 1201.1 Scope. The provisions of this chapter shall govern ventilation, temperature control, lighting, <i>yards</i> and <i>courts</i>,</p>			X	Higher cost for UL-listed listed UV germicidal irradiation systems.	Increased safety.

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		Sub Code:				
	sound transmission, room dimensions, surrounding materials, and rodent proofing and <u>UV germicidal irradiation systems</u> associated with the interior spaces of buildings.					
G176-21	<p>Add new text as follows:</p> <p><u>SECTION 2703 LIGHTNING PROTECTION SYSTEMS</u></p> <p><u>2703.1 General.</u> <u>Where provided, lightning protection systems shall comply with Sections 2703.2 through 2703.3.</u></p> <p><u>2703.2 Installation.</u> <u>Lightning protection systems shall be installed in accordance with NFPA 780 or UL 96A. UL 96A shall not be utilized for buildings used for the production, handling, or storage of ammunition, explosives, flammable liquids or gases, and other explosive ingredients including dust.</u></p> <p><u>2703.2.1 Surge protection.</u> <u>Where lightning protection systems are installed, surge protective devices shall also be installed in accordance with NFPA 70 and either NFPA 780 or UL 96A, as applicable.</u></p> <p><u>2703.3 Interconnection of systems.</u> <u>All lightning protection systems on a building or structure shall be interconnected in accordance with NFPA 780 or UL 96A, as applicable.</u></p>		X			Provides installation guidance.
G177-21	<p>Revise as follows:</p> <p><u>3001.2 Elevator emergency Emergency—elevator communication systems for the deaf, hard of hearing and speech impaired.</u> <u>An elevator emergency-elevator two-way communication system shall be provided. The system shall provide that includes both visual visible text and audible communication modes that meet all of the following complying with the requirements in ASME A17.1/CSA B44.:</u></p> <p><u>They system shall provide a means to enable authorized personnel to verify:</u></p> <ol style="list-style-type: none"> <u>1. The presence of someone in the car.</u> <u>2. That the person(s) is trapped.</u> <p><u>Once an entrapment is verified, the system shall enable authorized personnel to:</u></p> <ol style="list-style-type: none"> <u>1. Determine if assistance is needed. When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.</u> <u>2. Communicate when help is on the way. Is operational when the elevator is operational.</u> 		X			Clarification.

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Sub Code:						
	3. <u>Communicate when help arrives on site.</u> Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.					
G178-21	<p>Revise as follows:</p> <p>SECTION 3002 HOISTWAY ENCLOSURES</p> <p>3002.1 Hoistway enclosure protection. Elevator, dumbwaiter and other hoistway enclosures shall be shaft enclosures complying with Sections 712 and 713. <u>A hoistway for elevators, dumbwaiters and other vertical access devices shall be comply with Sections 712 and 713. Where the hoistway is required to be enclosed it shall be constructed as a shaft enclosure in accordance with Section 713.</u></p> <p>3002.1.1 Opening protectives. Openings in <u>fire-resistant rated</u> hoistway enclosures shall be protected as required in Chapter 7. Exception: The elevator car doors and the associated elevator hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I Emergency Recall Operation.</p> <p>3002.1.2 Hardware. Hardware on opening protectives <u>elevator hoistway doors</u> shall be of an <i>approved</i> type installed as tested, except that <i>approved</i> interlocks, mechanical locks and electric contacts, door and gate electric contacts and door-operating mechanisms shall be exempt from the fire test requirements.</p> <p>3002.2 Number of elevator cars in a hoistway. Where four or more elevator cars serve all or the same portion of a building, the elevators shall be located in not fewer than two separate <u>fire-resistance rated</u> hoistways. Not more than four elevator cars shall be located in any single <u>fire-resistance rated</u> hoistway enclosure.</p> <p>3002.6 Prohibited doors or other devices. Doors or other devices, other than hoistway doors and the elevator car door and the associated elevator hoistway doors, shall be prohibited at the point of access to an elevator car unless such <u>doors or other devices</u> are readily openable from <u>inside</u> the car side without a key, tool, special knowledge or effort.</p> <p>SECTION 3006 ELEVATOR LOBBIES AND HOISTWAY OPENING DOOR PROTECTION</p> <p>3006.1 General. Elevator hoistway openings and enclosed Enclosed <u>elevator lobbies and elevator hoistway door protection</u> shall be provided in accordance with the following:</p>		X			Clarification.

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		Decrease	Neutral	Increase		
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	<p>1. Where <u>elevator hoistway door opening</u> protection is required by Section 3006.2, such protection shall be <u>provided</u> in accordance with Section 3006.3.</p> <p>2. Where enclosed elevator lobbies are required for underground buildings, such lobbies shall comply with Section 405.4.3.</p> <p>3. Where an <i>area of refuge</i> is required and an enclosed elevator lobby is provided to serve as an <i>area of refuge</i>, the enclosed elevator lobby shall comply with Section 1009.6 <u>1009.6.4</u>.</p> <p>4. Where fire service access elevators are provided, enclosed elevator lobbies shall comply with Section 3007.6.</p> <p>5. Where occupant evacuation elevators are provided, enclosed elevator lobbies shall comply with Section 3008.6.</p> <p>3006.2 Elevator hoistway door Hoistway opening protection required. Elevator hoistway door openings <u>doors</u> shall be protected in accordance with Section 3006.3 where an elevator hoistway connects more than three <i>stories</i>, is required to be enclosed within a <i>shaft enclosure</i> in accordance with Section 712.1.1 and any of the following conditions apply:</p> <ol style="list-style-type: none"> 1. The building is not protected throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1 or 903.3.1.2. 2. The building contains a Group I-1, Condition 2 occupancy. 3. The building contains a Group I-2 occupancy. 4. The building contains a Group I-3 occupancy. 5. The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) in height. The height of the hoistway shall be measured from the <i>lowest floor</i> to the highest floor of the floors served by the hoistway. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Protection of elevator hoistway door openings <u>doors are</u> <u>is</u> not required where the elevator serves only <i>open parking garages</i> in accordance with Section 406.5. 2. Protection of elevator hoistway door openings <u>doors are</u> is not required at the level(s) of exit discharge, provided that the level(s) of exit discharge is equipped with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1. 					

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>3. Enclosed elevator lobbies and protection <u>Protection of elevator hoistway door openings doors</u> are not required on levels where the elevator hoistway <u>door</u> opens to the exterior.</p> <p>3006.3 Elevator hoistway door Hoistway opening protection. Where Section 3006.2 requires protection of the elevator hoistway door opening, the protection shall be provided by one of the following:</p> <ol style="list-style-type: none"> 1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway shaft enclosure doors from each floor by <i>fire partitions</i> in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.2.2.1 as required for <i>corridor</i> walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for <i>corridors</i> in accordance with Section 717.5.4.1. 2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway shaft enclosure doors from each floor by <i>smoke partitions</i> in accordance with Section 710 where the building is equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the <i>smoke partitions</i> shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for <i>corridors</i> in accordance with Section 717.5.4.1. 3. Additional doors <u>or other devices</u> shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door <u>or other devices</u> shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal. 4. The elevator hoistway shall be pressurized in accordance with Section 909.21. <p>713.14 Elevator, dumbwaiter and other hoistways.Elevator, dumbwaiter and other hoistway enclosures shall be constructed in accordance with Sections 712 and <u>A hoistway for elevators, dumbwaiters and other vertical devices shall</u></p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p><u>comply with Section 712. Where the hoistway is required to be enclosed, it shall be constructed as a shaft enclosure in accordance with Section 713, and Chapter 30.</u></p> <p>716.2.6.1 Door closing. <i>Fire doors</i> shall be latching and self- or automatic-closing in accordance with this section.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Fire doors</i> located in common walls separating <i>sleeping units</i> in Group R-1 shall be permitted without automatic- or <i>self-closing</i> devices. The elevator car doors and the associated <u>elevator hoistway enclosure doors</u> at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation. 					
G182-22	<p>Revise as follows:</p> <p>3006.2 Hoistway opening protection Elevator hoistway door required. Elevator hoistway <u>doors</u> door openings shall be protected in accordance with Section 3006.3 where an elevator hoistway connects more than three <i>stories</i>, is required to be enclosed within a <i>shaft enclosure</i> in accordance with Section 712.1.1 and any of the following conditions apply:</p> <ol style="list-style-type: none"> The building is not protected throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1 or 903.3.1.2. The building contains a Group I-1, Condition 2 occupancy. The building contains a Group I-2 occupancy. The building contains a Group I-3 occupancy. The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) in height. The height of the hoistway shall be measured from the <i>lowest floor</i> to the highest floor of the floors served by the hoistway. <u>The elevator hoistway door is located in the wall of a corridor required to be fire-resistance rated in accordance with Section 1020.1.</u> <p>Exceptions:</p> <ol style="list-style-type: none"> Protection of elevator hoistway <u>doors</u> door openings is not required where the elevator serves only <i>open parking garages</i> in accordance with Section 406.5. Protection of elevator hoistway <u>doors</u> door openings is not required at the level(s) of exit discharge, provided that the 		X		Clarification.	

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>level(s) of exit discharge is equipped with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.1.</p> <p>3. Enclosed elevator lobbies and protection <u>Protection</u> of elevator hoistway <u>doors</u> door openings are not required on levels where the elevator hoistway opens to the exterior.</p> <p>3006.2.1 Rated corridors. Where <i>corridors</i> are required to be fire-resistance rated in accordance with Section 1020.2, elevator hoistway openings shall be protected in accordance with Section 3006.3.</p> <p>Revise as follows:</p> <p>1020.2.1 Hoistway opening protection. <u>Elevator hoistway doors in elevators hoistway enclosures required to be fire resistance rated shall be protected in accordance with Section 716.</u> Elevator hoistway <u>doors</u> openings shall <u>also</u> be protected in accordance with Section <u>3006.2</u> 3006.2.1.</p>					
G183-21 Part I	<p>Revise as follows:</p> <p>SECTION 3006 ELEVATOR LOBBIES AND HOISTWAY OPENING DOOR PROTECTION</p> <p>3006.3 Hoistway opening Elevator hoistway door protection. Where Section 3006.2 requires protection of the elevator hoistway door opening <u>doors</u>, the protection shall be provided by one of the following:</p> <ol style="list-style-type: none"> 1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway <i>shaft enclosure</i> doors from each floor by <u>with fire partitions</u> in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls <u>fire partitions</u> shall comply with Section 716.2.2.1 as required for corridor walls. Penetrations of the enclosed elevator lobby <u>fire partitions</u> by ducts and air transfer openings shall be protected as required for <i>corridors</i> in accordance with Section 717.5.4.1. 2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway <i>shaft enclosure</i> doors from each floor by <u>with smoke partitions</u> in accordance with Section 710 where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the <i>smoke partitions</i> shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby <u>smoke partitions</u> by ducts and air 		X		Clarification.	

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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		Sub Code:				
	<p>transfer openings shall be protected as required for <i>corridors</i> in accordance with Section 717.5.4.1.</p> <p>3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.</p> <p>4. The elevator hoistway shall be pressurized in accordance with Section 909.21.</p> <p>SECTION 3007 FIRE SERVICE ACCESS ELEVATOR Revise as follows: 3007.6.2 Elevator lobby Lobby-enclosure separation. The fire service access elevator lobby shall be enclosed <u>separated from each floor</u> with a <i>smoke barrier</i> in accordance with Section 709 having a <i>fire-resistance rating</i> of not less than 1 hour, except that lobby doorways shall comply with Section 3007.6.3. Exception: Enclosed fire <u>Fire</u> service access elevator lobbies are not required <u>to be separated</u> at the <i>levels of exit discharge</i>.</p> <p>3007.6.3 Lobby Elevator lobby doorways. Other than doors to the hoistway, elevator control room or elevator control space, each door doorway to an enclosed fire service access elevator lobby in the smoke barrier shall be provided with a ³/₄-hour <i>fire door assembly complying with Section 716. The</i> <u>Such</u> <i>fire door assembly shall comply with the smoke and draft control door assembly requirements of Section 716.2.2.1.1 and be tested in accordance with UL 1784 without an artificial bottom seal.</i></p> <p>SECTION 3008 OCCUPANT EVACUATION ELEVATORS Revise as follows: 3008.6.1 Access to interior exit stairway or ramp. The occupant evacuation elevator lobby shall have direct access from the enclosed elevator lobby to an interior exit stairway or ramp. Exceptions: 1. Access to an interior exit stairway or ramp shall be permitted to be through a protected path of travel that has a level of fire protection not less than the elevator lobby enclosure. The protected path shall be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly in accordance Section 716.2.2.1 716.2.2.1.1.</p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>2. Elevators that only service an open parking garage and the <u>elevator lobby</u> of the building shall not be required to provide direct access.</p> <p>3008.6.2 Elevator lobby Lobby enclosure separation. The occupant evacuation elevator lobby shall be enclosed <u>separated from each floor with a smoke barrier in accordance with Section 709</u> having a fire-resistance rating of not less than 1 hour, except that lobby doorways shall comply with Section 3008.6.3.</p> <p>Exception: Enclosed occupant Occupant evacuation elevator lobbies are not required at the levels of exit discharge.</p> <p>3008.6.3 Elevator lobby Lobby doorways. Other than the doors to the hoistway, elevator machine rooms, machinery spaces, control rooms and control spaces within the lobby enclosure in the smoke barrier, each doorway to an occupant evacuation elevator lobby shall be provided with a ³/₄-hour fire door assembly complying with Section 716. The <u>Such</u> fire door assembly shall comply with the smoke and draft control assembly requirements of Section 716.2.2.1.1 and be tested in accordance with UL 1784 without an artificial bottom seal.</p> <p>3008.6.3.1 Vision panel. A vision panel shall be installed in each fire door assembly protecting the lobby doorway in the smoke barrier. The vision panel shall consist of fire-protection-rated glazing, shall comply with the requirements of Section 716 and shall be located to furnish clear vision of the occupant evacuation elevator lobby.</p> <p>3008.6.3.2 Door closing. Each fire door assembly protecting the lobby doorway in the smoke barrier shall be automatic-closing upon receipt of any fire alarm signal from the emergency voice/alarm communication system serving the building.</p>					
G183-21 Part II	<p>SECTION 708 FIRE PARTITIONS</p> <p>Add new text as follows:</p> <p>708.4.1 Fire partition walls enclosing elevator lobbies. Fire partition walls used to enclose elevator lobbies in accordance with Section 3006.3 (elevator hoistway protection), shall form an <u>effective enclosure that terminates at a fire barrier or fire partition having a level of fire-resistance-rating not less than 1 hour, or an outside wall.</u></p> <p>SECTION 709 SMOKE BARRIERS</p> <p>Revise as follows:</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>709.4.2 Smoke-barrier walls enclosing areas of refuge or elevator lobbies. <i>Smoke-barrier</i> walls used to enclose <i>areas of refuge</i> in accordance with Section 1009.6.4, or to enclose elevator lobbies in accordance with Section 405.4.3, 3007.6.2, or 3008.6.2, shall form an effective membrane enclosure that terminates at a <i>fire barrier</i> wall having a level of <i>fire protection resistance rating</i> not less than 1 hour, another <i>smoke barrier</i> wall or an outside wall. A smoke and draft control door assembly as specified in Section 716.2.2.1.1 shall not be required at each elevator hoistway door opening where protected by an elevator lobby, at each exit door opening into a protected lobby or at each exit doorway between an <i>area of refuge</i> and the exit enclosure.</p> <p>SECTION 710 SMOKE PARTITIONS Add new text as follows: 710.4.1 Smoke partition walls enclosing elevator lobbies. <i>Smoke partition walls used to enclose elevator lobbies in accordance with Section 3006.3 (elevator hoistway protection), shall form an effective enclosure that terminates at a fire barrier having a level of fire- resistance-rating not less than 1 hour, another smoke partition or an outside wall.</i></p>					
G185-21	<p>Revise as follows: 3006.3 Hoistway opening protection. Where Section 3006.2 requires protection of the elevator hoistway door opening, the protection shall be provided by one of the following:</p> <ol style="list-style-type: none"> 1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway <i>shaft enclosure</i> doors from each floor by <i>fire partitions</i> in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.2.2.1 as required for <i>corridor</i> walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for <i>corridors</i> in accordance with Section 717.5.4.1. 2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway <i>shaft enclosure</i> doors from each floor by <i>smoke partitions</i> in accordance with Section 710 where the building is equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the <i>smoke partitions</i> shall comply with Sections 710.5.2.2, 		X			Added design option.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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		Sub Code:				
	<p>710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for <i>corridors</i> in accordance with Section 717.5.4.1.</p> <p>3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door <u>doors</u> shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.</p> <p>4. The elevator hoistway shall be pressurized in accordance with Section 909.21.</p> <p>5. <u>A smoke protective curtain assembly for hoistways shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such curtain assemblies shall comply with the smoke and draft control requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal. Such curtain assemblies shall be equipped with a control unit listed to UL 864. Such curtain assemblies shall comply with section 2.11.6.3 of ASME A17.1/CSA B44. Installation and maintenance shall be in accordance with NFPA 105</u></p>					
G187-21	<p>Revise as follows:</p> <p>3007.6 Fire service access elevator lobby. The fire service access elevator shall open into an enclosed fire service access elevator lobby in accordance with Sections 3007.6.1 through 3007.6.5. Egress is permitted through the enclosed elevator lobby in accordance with Item 1 of Section 1016.2.</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> 1. Where a fire service access elevator has two entrances onto a floor, the second entrance shall be permitted to be protected in accordance with Section 3006.3.2. 2. <u>A fire service access elevator lobby is not required to be provided at an occupied roof.</u> 	X			Cost reduction by eliminating requirements for a FSAE lobby at occupied roof level.	Eliminates unnecessary requirement.
G188-21	<p>Add new text as follows:</p> <p><u>SECTION 3009 PRIVATE RESIDENCE ELEVATORS</u></p> <p>3009.1 General. <u>The design, construction, and installation, alteration, repair and maintenance of elevators installed within a residential dwelling unit or installed to provide access to one individual residential dwelling unit shall conform to ASME A17.1/CSA B44, Section 5.3.</u></p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>3009.2 Hoistway Enclosures. Hoistway enclosures shall comply with ASME A17.1/CSA B44, Requirement 5.3.1.1.</p> <p>3009.3 Hoistway Opening Protection. Hoistway landing doors for private residence elevators shall comply with ASME A17.1/CSA B44, Requirements 5.3.1.8.1 through 5.3.1.8.3.</p>					
G189-21	<p>Revise as follows:</p> <p>3103.1 General. The provisions of Sections 3103.1 through 3103.4 <u>3103.5</u> shall apply to structures erected for a period of less than 180 days. <i>Special event structures</i>, tents, umbrella structures and other membrane structures erected for a period of less than 180 days shall also comply with the <i>International Fire Code</i>. Those erected for a longer period of time shall comply with applicable sections of this code.</p> <p>Add new text as follows:</p> <p>3103.5 Bleachers. <u>Temporary bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply with ICC 300.</u></p>		X			Clarification.
G191-21	<p>Revise as follows:</p> <p>3105.2 Design and construction. <i>Awnings</i> and <i>canopies</i> shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. <i>Awnings</i> shall have frames of noncombustible material, <i>fire-retardant-treated wood</i>, or heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.</p>		X			Editorial.
G193-21	<p>Add new text as follows:</p> <p>3111.3.5 Elevated photovoltaic (PV) support structures. <u>Elevated PV support structures shall comply with either 3111.3.5.1 or 3111.3.5.2.</u></p> <p>Exception: <u>Elevated PV support structures that are installed over agricultural use.</u></p> <p>3111.3.5.1 PV panels installed over open-grid framing or non-combustible deck. <u>Elevated PV support structures with PV panels installed over open-grid framing or over a noncombustible deck shall have PV panels tested, listed, and labeled with a fire type rating in accordance with UL 1703 or with both UL 61730-1 and</u></p>		X			Improved safety.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p><u>UL 61730-2. Photovoltaic panels marked “not fire rated” shall not be installed on <i>elevated PV support structures</i>.</u></p> <p>3111.3.5.2 PV panels installed over a roof assembly. <u><i>Elevated PV support structures</i> with a PV panel system installed over a roof assembly shall have a fire classification in accordance with Section 1505.9.</u></p> <p>Revise as follows:</p> <p>3111.3.5 3111.3.6 Ground-mounted photovoltaic (PV) panel systems. Ground-mounted photovoltaic <u>panel</u> systems shall be designed and installed in accordance with Chapter 16 and the <i>International Fire Code</i>.</p> <p>3111.3.5.1 3111.3.6.1 Fire separation distances. Ground-mounted photovoltaic <u>panel</u> systems shall be subject to the <i>fire separation distance</i> requirements determined by the local jurisdiction.</p>					
G194-21	<p>Revise as follows:</p> <p>3101.1 Scope. The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, pedestrian walkways and tunnels, automatic vehicular gates, awnings and canopies, marquees, signs, towers, antennas, relocatable buildings, swimming pool enclosures and safety devices, solar energy systems, public use restroom buildings on publicly owned lands in flood hazard areas and intermodal shipping containers.</p> <p>Delete without substitution:</p> <p>SECTION 3114 PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS</p> <p>3114.1 General. For the purpose of this section, public restroom buildings are located on publicly owned lands in <i>flood hazard areas</i> and intended for public use. Public restroom buildings and portions of other buildings that contain public restrooms are limited to toilet rooms, bathrooms, showers and changing rooms. Public restroom buildings and portions of buildings that contain public restrooms shall comply with the requirements of this section. Public use restrooms that are not elevated or <i>dry floodproofed</i> in accordance with Section 1612 shall comply with Section 3114.2. Portions of buildings that include uses other than public use toilet rooms, bathrooms, showers and changing rooms shall comply with Section 1612.</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>3114.2 Flood resistance. Public use restrooms on publicly owned lands in <i>flood hazard areas</i> shall comply with the requirements of ASCE 24, except for elevation requirements, and shall comply with all of the following criteria:</p> <ol style="list-style-type: none"> 1. The building footprint is not more than 1,500 square feet (139 m²). 2. Located, designed and constructed to resist the effects of <i>flood hazards</i> and <i>flood loads</i> to minimize <i>flood damage</i> from a combination of wind and water <i>loads</i> associated with the <i>base flood</i>. 3. Anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic <i>loads</i>, including the effects of buoyancy during conditions of the <i>base flood</i>. 4. Constructed of <i>flood-damage-resistant materials</i>. 5. Where enclosed by walls, the walls have flood openings. 6. Mechanical and electrical systems are located above the <i>base flood elevation</i>. 7. Plumbing fixtures and plumbing connections are located above the <i>base flood elevation</i>. 8. An emergency plan, approved by the jurisdiction, is submitted to the building official and includes building design documents specifying implementation of protection measures prior to the onset of <i>flooding conditions</i>. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Minimum necessary electric equipment required to address health, life safety and electric code requirements is permitted below the <i>base flood elevation</i> in accordance with ASCE 24 provisions for electric elements installed below the minimum elevations. 	-				
G196-21	<p>Replace as follows:</p> <p>3115.8.1 Foundations and supports. <i>Intermodal shipping containers</i> repurposed for use as a permanent building or structure shall be supported on foundations or other supporting structures designed and constructed in accordance with Chapters 16 through 23.</p> <p>3115.8.1.1 Anchorage. <i>Intermodal shipping containers</i> shall be anchored to foundations or other supporting structures as necessary to provide a continuous load path for all applicable design and environmental <i>loads</i> in accordance with Chapter 16.</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<u>3115.8.1.2 Stacking. <i>Intermodal shipping containers used to support stacked units shall comply with Section 3115.8.4.</i></u>					
G197-21	<p>Revise as follows:</p> <p>SECTION 3115 INTERMODAL SHIPPING CONTAINERS</p> <p>3115.8.4 Detailed structural design procedure. A structural analysis meeting the requirements of this section shall be provided to the <i>building official</i> to demonstrate the structural adequacy of the intermodal shipping containers.</p> <p>Exception: Intermodal shipping containers designed in accordance with Section 3115.8.5.</p> <p>3115.8.4.3 Allowable shear value. The allowable shear values for the intermodal shipping container corrugated steel sheet panel side walls and end walls shall be demonstrated by testing and analysis accordance with Section 104.11. Where penetrations are made in the side walls or end walls designated as part of the lateral force-resisting system, the penetrations shall be substantiated by rational analysis.</p> <p>3115.8.5 Simplified structural design procedure of single-unit containers. Single-unit <i>intermodal shipping containers</i> conforming to the limitations of Section 3115.8.5.1 shall be permitted to be designed in accordance with the simplified structural design provisions of Section 3115.8.5.2 <u>Sections 3115.8.5.2 and 3115.8.5.3.</u></p> <p>3115.8.5.2 Simplified structural Structural design assumptions. Where permitted by Section 3115.8.5.1, single-unit, stand-alone intermodal shipping containers shall be designed using the following assumptions for the profiled steel panel-corrugated steel shear side walls and end walls lateral force resisting system:</p> <ol style="list-style-type: none"> 1. The appropriate detailing requirements contained in Chapters 16 through 23. 2. Response modification coefficient, $R = 2$. 3. Overstrength factor, $\Omega_0 = 2.5$. 4. Deflection amplification factor, $C_d = 2$. 5. Limits on structural height, $h_n = 9.5$ feet (2900 mm). <p>3115.8.5.3 Allowable shear. The allowable shear for the corrugated steel intermodal shipping container <u>profiled steel panel</u> side walls (longitudinal) and end walls (transverse) for wind design and seismic design using the coefficients of Section</p>		X			Clarification.

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Sub Code:						
	<p>3115.8.5.2 shall be in accordance with Table 3115.8.5.3, provided that all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The total linear length of all openings in any individual side wall or end wall shall be limited to not more than 50 percent of the length of that side wall or end wall, as shown in Figure 3115.8.5.3(1). 2. Any full-height wall length, or portion thereof, less than 4 feet (305 mm) shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2). 3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3). 4. Where openings are made in <u>the intermodal shipping container walls, floors or roofs, for doors, windows and other openings:</u> <ol style="list-style-type: none"> 4.1 The openings shall be framed with steel elements that are designed in accordance with Chapters 16 and 22. The 4.2 cross section and material grade of any new steel element shall be equal to or greater than the steel element removed. 5. A maximum of one penetration not greater than 6 inches (152 mm) in diameter for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 323 mm²) for electrical boxes, is permitted for each individual 8-foot (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the lateral force-resisting system shall not be limited in size or quantity. Existing <i>intermodal shipping container</i> vents shall not be considered a penetration, as shown in Figure 3115.8.5.3(4). 6. End wall doors designated as part of the lateral force-resisting system shall be welded closed. <p>TABLE 3115.8.5.3 ALLOWABLE SHEAR VALUES FOR INTERMODAL SHIPPING CONTAINER CORRUGATED STEEL PROFILED STEEL PANEL SIDE WALLS AND END WALLS FOR WIND OR SEISMIC LOADING</p> <p>Portions of table not shown remain unchanged.</p>					

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Sub Code:						
	c. Limitations of Section <u>Sections 3115.8.5.1 and 3115.8.5.3</u> shall apply.					
G198-21	<p>Revise as follows:</p> <p>3115.8.2 Welds. <u>The strength of new</u> New welds and connections shall be <u>no less equal to or greater than the strength provided by the original connections.</u> <u>All new welds and connections shall be designed and constructed in accordance with Chapters 16, 17, and 22.</u></p> <p>3115.8.4 Detailed design procedure. A structural analysis meeting the requirements of this section shall be provided to the <i>building official</i> to demonstrate the structural adequacy of the intermodal shipping containers.</p> <p>Exception: <u>Structures using an intermodal</u> intermodal shipping <u>container</u> containers designed in accordance with Section 3115.8.5.</p> <p>3115.8.4.1 Material properties . Structural material properties for existing <i>intermodal shipping container</i> steel components shall be established by <u>Section 2202.</u> material testing where the steel grade and composition cannot be identified by the manufacturer's designation as to manufacture and mill test.</p> <p>3115.8.4.3 Allowable shear value . The allowable shear values for the <i>intermodal shipping container</i> corrugated steel sheet panel side walls and end walls shall be <u>determined in accordance with the design approach selected in Section 3115.8.4.2.</u> demonstrated by testing and analysis accordance with Section 104.11. Where penetrations are made in the side walls or end walls designated as part of the lateral force-resisting system, the penetrations shall be substantiated by rational analysis.</p> <p>3115.8.5.3 Allowable shear. The allowable shear for the corrugated steel side walls (longitudinal) and end walls (transverse) for wind design and seismic design using the coefficients of Section 3115.8.5.2 shall be in accordance with Table 3115.8.5.3, provided that all of the following conditions are met:</p> <ol style="list-style-type: none"> The total linear length of all openings in any individual side wall or end wall shall be limited to not more than 50 percent of the length of that side wall or end wall, as shown in Figure 3115.8.5.3(1). 		X			Editorial.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>2. Any full-height wall length, or portion thereof, less than 4 feet (305 mm) shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2).</p> <p>3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3). <u>The existing door interlocking mechanism shall not be considered as a component of the required load path.</u></p> <p>4. Where openings are made in container walls, floors or roofs, for doors, windows and other openings:</p> <p>4.1 The openings shall be framed with steel elements that are designed in accordance with Chapters 16 and 22.</p> <p>4.2 The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.</p> <p>5. A maximum of one penetration not greater than 6 inches (152 mm) in diameter for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 323 mm²) for electrical boxes, is permitted for each individual 8-foot (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the lateral force-resisting system shall not be limited in size or quantity. Existing <i>intermodal shipping container</i> vents shall not be considered a penetration, as shown in Figure 3115.8.5.3(4).</p> <p>6. End wall doors designated as part of the lateral force-resisting system shall be <u>intermittently welded closed around the full perimeter of the door panels.</u></p>					
G199-21 Part I	<p>SECTION 3301 GENERAL Revise as follows: 3301.1 Scope. The provisions of this chapter shall govern safety during construction and the protection of adjacent public and private properties. <u>Fire safety during construction shall also comply with the applicable provisions of Chapter 33 of the International Fire Code.</u> 3301.2 Storage and placement of construction equipment and materials. Construction equipment and materials shall be stored</p>		X			Clarification.

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>and placed so as not to endanger the public, the workers or adjoining property for the duration of the construction project.</p> <p>[BS] 3301.3 3301.2.1 Roof Structural and construction loads. Structural roof components shall be capable of supporting the roof-covering system and the material and equipment <i>loads</i> that will be encountered during installation of the system.</p> <p>3301.4 3302.1 Maintenance of exits, existing structural elements, fire protection devices and sanitary safeguards Alterations, repairs and additions. Required <i>exits</i>, existing structural elements, fire protection devices and sanitary safeguards shall be maintained at all times during <i>alterations, repairs</i> or <i>additions</i> to any building or structure.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where such required elements or devices are being altered or repaired, adequate substitute provisions shall be made. 2. Maintenance of such elements and devices is not required where the existing building is not occupied. <p>3301.5 3302.2 Removal of waste materials Manner of removal. Waste materials shall be removed in a manner that prevents injury or damage to persons, adjoining properties and public rights-of-way.</p> <p>Delete without substitution:</p> <p>3302.3 Fire safety during construction. Fire safety during construction shall comply with the applicable requirements of this code and the applicable provisions of Chapter 33 of the International Fire Code.</p> <p>Revise as follows:</p> <p>SECTION 3302 OWNER'S RESPONSIBILITY FOR FIRE PROTECTION CONSTRUCTION SAFEGUARDS</p> <p>Add new text as follows:</p> <p>3302.1 Site Safety Plan. <u>The owner or owner's authorized agent shall be responsible for the development, implementation and maintenance of an approved, written site safety plan establishing a fire prevention program at the project site applicable throughout all phases of the construction, repair, alteration or demolition work. The plan shall be submitted and approved before a building permit is issued, Any changes to the plan shall address the requirements of this chapter and other applicable portions of the International Fire Code, the duties of staff, and</u></p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p><u>staff training requirements. The plan shall be submitted for approval in accordance with the <i>International Fire Code</i>.</u></p> <p>3302.1.1 Components of site safety plans. <u>Site safety plans shall include the following as applicable:</u></p> <ol style="list-style-type: none"> 1. <u>Name and contact information of site safety director.</u> 2. <u>Documentation of the training of the site safety director and fire watch personnel.</u> 3. <u>Procedures for reporting emergencies.</u> 4. <u>Fire department vehicle access routes.</u> 5. <u>Location of fire protection equipment, including portable fire extinguishers, standpipes, fire department connections and fire hydrants.</u> 6. <u>Smoking and cooking policies, designated areas to be used where approved, and signage locations in accordance with the <i>International Fire Code</i>.</u> 7. <u>Location and safety considerations for temporary heating equipment.</u> 8. <u>Hot work permit plan.</u> 9. <u>Plans for control of combustible waste material.</u> 10. <u>Locations and methods for storage and use of flammable and combustible liquids and other hazardous materials.</u> 11. <u>Provisions for site security and, where required, for a fire watch.</u> 12. <u>Changes that affect this plan.</u> 13. <u>Other site-specific information required by the <i>International Fire Code</i>.</u> <p>3302.2 Site safety director. <u>The owner shall designate a person to be the site safety director. The site safety director shall be responsible for ensuring compliance with the site safety plan. The site safety director shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided in accordance with the <i>International Fire Code</i>, the site safety director shall be responsible for the guard service.</u></p> <p>3302.3 Daily fire safety inspection. <u>The site safety director shall be responsible for completion of a daily fire safety inspection at the project site. Each day, all building and outdoor areas shall be inspected to ensure compliance with the inspection list in this section. The results of each inspection shall be documented and maintained on-site until a certificate of occupancy has been</u></p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p><u>issued. Documentation shall be immediately available on-site inspection and review.</u></p> <ol style="list-style-type: none"> 1. <u>Any contractors entering the site to perform hot work each day have been instructed in the hot work safety requirements in the <i>International Fire Code</i>, and hot work is performed only in areas approved by the site safety director.</u> 2. <u>Temporary heating equipment is maintained away from combustible materials in accordance with the equipment manufacturer's instructions.</u> 3. <u>Combustible debris, rubbish and waste material is removed from the building in areas where work is not being performed.</u> 4. <u>Temporary wiring does not have exposed conductors. Flammable liquids and other hazardous materials are stored in locations that have been approved by the site safety director when not involved in work that is being performed.</u> 5. <u>Fire apparatus access roads required by the <i>International Fire Code</i> are maintained clear of obstructions that reduce the width of the usable roadway to less than 20 feet (6096 mm).</u> 6. <u>Fire hydrants are clearly visible from access roads and are not obstructed.</u> 7. <u>The location of fire department connections to standpipe and in-service sprinkler systems are clearly identifiable from the access road and such connections are not obstructed.</u> 8. <u>Standpipe systems are in service and continuous to the highest work floor, as specified in Section 3311.</u> 9. <u>Portable fire extinguishers are available in locations required by Sections 3309 and for roofing operations in accordance with the <i>International Fire Code</i>.</u> 10. <u>Where a fire watch is required, fire watch records complying with the International Fire Code are up-to-date.</u> <p>3302.3.1 Violations. <u>Failure to properly conduct, document and maintain documentation required by this section shall constitute an unlawful act in accordance with Section 114.1 and shall result in the issuance of a notice of violation to the site safety director in accordance with Section 114.2. Upon the</u></p>					

Table 6. 2024 IBC Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<u>third offense, the Building Official is authorized to issue a stop work order in accordance with Section 115, and work shall not resume until satisfactory assurances of future compliance have been presented to and approved by the Building Official.</u>					

APPENDIX G

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
EB1-22	<p>Revised as follows:</p> <p>[A] 104.2.1 Determination of substantially improved or substantially damaged existing buildings and structures in flood hazard areas. For applications for reconstruction, rehabilitation, repair, alteration, addition or other improvement of existing buildings or structures located in flood hazard areas, the building official shall determine where the proposed work constitutes substantial improvement or repair of substantial damage. Where the building official determines that the proposed work constitutes substantial improvement or repair of substantial damage, and where required by this code, the building official shall require the building to meet the requirements of Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>[A] 115.5 Restoration or abatement. The structure or equipment determined to be unsafe by the code official is permitted to be restored to a safe condition. The owner, the owner's authorized agent, operator or occupant of a structure, premises or equipment deemed unsafe by the code official shall abate or cause to be abated or corrected such unsafe conditions either by repair, rehabilitation <u>alteration</u>, demolition or other approved corrective action. To the extent that repairs, alterations or additions are made, or a change of occupancy occurs during the restoration of the structure, such repairs, alterations, additions or change of occupancy shall comply with the requirements of this code.</p> <p>Deleted without substitution: 202 REHABILITATION. Any work, as described by the categories of work defined herein, undertaken in an existing building.</p>		X			Clarification.
EB2-22	<p>Revised as follows:</p> <p>[BS] 202 DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:</p> <ol style="list-style-type: none"> 1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground. 2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or 		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	ornamentation of the building or structure under permanent, routine or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake <u>aftershock</u> , or other environmental loads when such loads are imminent.					
EB6-22	<p>Revised as follows: [BS] 202 SUBSTANTIAL STRUCTURAL DAMAGE. A condition where any of the following apply:</p> <p>1. The vertical elements of the lateral force-resisting system have suffered damage such that the lateral load-carrying capacity of any story in any horizontal direction has been reduced by more than 33 percent from its predamage condition. Removal of structurally undamaged components for the purposes of implementing repair shall not be considered damage that reduces load carrying capacity.</p> <p>2. The capacity of any vertical component carrying gravity load, or any group of such components, that has a tributary area more than 30 percent of the total area of the structure’s floor(s) and roof(s) has been reduced more than 20 percent from its predamage condition, and the remaining capacity of such affected elements, with respect to all dead and live loads, is less than 75 percent of that required by the International Building Code for new buildings of similar structure, purpose and location. Removal of structurally undamaged components for the purposes of implementing repair shall not be considered damage that reduces load carrying capacity.</p> <p>3. The capacity of any structural component carrying snow load, or any group of such components, that supports more than 30 percent of the roof area of similar construction has been reduced more than 20 percent from its predamage condition, and the remaining capacity with respect to dead, live and snow loads is less than 75 percent of that required by the International Building Code for new buildings of similar structure, purpose and location. Removal of structurally undamaged components for the purposes of implementing repair shall not be considered damage that reduces load carrying capacity.</p> <p><u>For purposes of this definition, work done to implement repairs shall not be considered damage that reduces structural capacity.</u></p>	X			Depends on the situation.	Clarification that related work does not itself create damage for which further expensive evaluation and possible upgrade are triggered.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
EB12-22	<p>Add new definition as follows: <u>202 STORM SHELTER.</u> <u>A building, structure or portions thereof, constructed in accordance with ICC 500, designated for use during hurricanes, tornadoes or other severe windstorms.</u></p> <p>SECTION 303 STORM SHELTERS Revise as follows: 303.1 Storm shelters General. This section applies to the design and construction of storm shelters constructed as rooms or spaces within existing buildings for the purpose of providing protection during storms that produce high winds, such as tornados, and hurricanes and other severe windstorms. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters. Such structures shall be constructed in accordance with this code and ICC 500.</p> <p>Add new text as follows: 303.1.1 Construction. Storm shelters shall be constructed in accordance with Section 423 of the International Building Code and ICC 500 and shall be designated as hurricane shelters, tornado shelters, or combined hurricane and tornado shelters. Exception: Storm shelters added to critical emergency operations facilities or Group E occupancies are not required to comply with the travel distance in Section 423.4.2 or 423.5.2 of the International Building Code.</p> <p>Revise as follows: 303.2 Addition to a Group E occupancy. Where an addition is added to an existing Group E occupancy located in an area where the shelter design wind speed for tornados is 250 mph (402.3 km/h) in accordance with Figure 304.2(1) of ICC 500 and the occupant load in the addition is 50 or more, the addition shall have a storm shelter constructed in accordance with ICC 500.</p> <p>Exceptions: 1. Group E day care facilities. 2. Group E occupancies accessory to places of religious worship. 3. Additions meeting the requirements for shelter design in ICC 500.</p> <p>303.2.1 Required Design occupant capacity. The required design occupant capacity of the storm shelter shall include all</p>			X	Cost of inspection and cost of any repairs.	Coordinates with changes in IBC.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>buildings on the site, and shall be the total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where an addition is being added on an existing Group E site, and where the addition is not of sufficient size to accommodate the required <u>design</u> occupant capacity of the storm shelter for all of the buildings on-site, the storm shelter shall at a minimum accommodate the required capacity for the addition. 2. Where approved by the code official, the required <u>design</u> occupant capacity of the shelter shall be permitted to be reduced by the design occupant capacity of any existing storm shelters on the site. <p>303.3 303.2.2 Occupancy classification. The occupancy classification for storm shelters shall be determined in accordance with Section 423.3 of the Internat. Building Code.</p> <p>Committee Action modified as follows:</p> <p>303.1 General. This section applies to the design and construction of storm shelters for the purpose of providing protection during tornados, hurricanes and other severe windstorms. Section 303.2 provides requirements for the evaluation, maintenance and repair of existing storm shelters. Section 303.3 specifies where storm shelters are required for additions to existing buildings.</p> <p>303.2 Evaluation, maintenance and repairs. Community storm shelters shall be evaluated, maintained and repaired in accordance with this section and ICC 500.</p> <p>303.2.1 Evaluation. Community storm shelters shall be evaluated annually, and when requested by the authority having jurisdiction, in accordance with ICC 500.</p> <p>303.2.2 Maintenance and Repairs. Community storm shelters shall be maintained in an operable condition. All structural and operational element shall be repaired or replaced in accordance with ICC 500 where damaged or found to be inoperable.</p>					
EB20-22	<p>Revise as follows:</p> <p>306.2 306.3 General Maintenance and repair of facilities. A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy. Required accessible means of egress shall be maintained during construction,</p>		X			Editorial.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>demolition, remodeling or alterations and additions to any occupied building.</p> <p>Exception: Existing means of egress need not be maintained where approved temporary means of egress and accessible means of egress systems and facilities are provided.</p> <p>306.2.1 306.3.1 Prohibited reduction in accessibility. An alteration that decreases or has the effect of decreasing accessibility of a building, facility or element, thereof, below the requirements for new construction at the time of the alteration is prohibited. The number of accessible elements need not exceed that required for new construction at the time of alteration.</p> <p>306.3 306.2 Design. Buildings and facilities shall be designed and constructed to be accessible in accordance with this code and the alteration and existing building provisions in ICC A117.1, as applicable.</p>					
EB21-22; EB22-22	<p>Revised as follows:</p> <p>306.5 Change of occupancy. <u>Where an existing Existing buildings that undergo undergoes a change of occupancy change of group or occupancy that includes alterations, such alterations shall comply with Section 306.7.</u></p> <p>Exception: Type B dwelling or sleeping units required by Section 1108 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.</p>		X			Clarification.
EB23-22	<p>Revised as follows:</p> <p>306.6 Additions. <u>Where additions contain dwelling or sleeping units, the accessibility requirements shall apply only to the quantity of the dwelling or sleeping units in the addition.</u> Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 306.7.1.</p> <p>306.7 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the International Building Code, ICC A117.1 and the provisions of Sections 306.7.1 through 306.7.16, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.</p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1. The altered element or space is not required to be on an accessible route, unless required by Section .</p> <p>2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.</p> <p>3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.</p> <p>4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building.</p> <p>306.7.3 Alteration of Type A units. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.</p> <p>306.7.4 Type B units. Type B dwelling or sleeping units required by Section 1108 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building.</p> <p>306.7.10 Determination of number of units. Where Chapter 11 of the International Building Code requires Accessible, Type A or Type B units and where such units are being altered or added <u>within an existing building</u>, the number of Accessible, Type A and Type B units shall be determined in accordance with Sections 306.7.10.1 through 306.7.10.3.</p> <p>306.7.10.1 Accessible dwelling or sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added within an existing building, the requirements of Section 1108 of the International Building Code for Accessible units apply only to the quantity of <u>spaces dwelling or sleeping units</u> being altered or added.</p> <p>306.7.10.2 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being altered or added <u>within an existing building</u>, the requirements of Section 1108 of the International Building Code for Type A units apply only to the quantity of the <u>spaces dwelling or sleeping units</u> being altered or added.</p>					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>306.7.10.3 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1108 of the International Building Code for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered <u>or added within an existing building</u> and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1108 of the International Building Code for Type B units apply only to the quantity of the spaces <u>dwelling or sleeping units</u> being altered or added.</p>					
EB24-22	<p>Revise as follows: 306.3.1 Prohibited reduction in accessibility. An alteration <u>or addition</u> that decreases or has the effect of decreasing accessibility of a building, facility or element, thereof, below the requirements for new construction at the time of the alteration <u>or addition</u> is prohibited. The number of accessible elements need not exceed that required for new construction at the time of alteration <u>or addition</u>.</p> <p>Add new text as follows: 306.6.1 Accessible Means of Egress. Not less than one <u>accessible means of egress from the addition shall be provided where required by Section 1009.1 of the International Building Code. An additional accessible means of egress shall be provided where an additional means of egress is required due to the addition.</u></p> <p>306.6.1.1 Additions for Elevators. Where <u>an addition is being constructed exclusively to accommodate the installation of an elevator or elevators to improve accessibility, an accessible means of egress in accordance with Section 1009.1 of the International Building Code is not required where all of the following conditions are provided:</u></p> <ol style="list-style-type: none"> <u>1. Two-way communication is provided at all elevator landings that are part of the addition in accordance with Section 1009.8 of the International Building Code.</u> <u>2. Each elevator landing is on floor level with access to a horizontal exit or to a stairway with a width of not less than 36 inches (914 mm).</u> 	X			Cost savings depends on whether a 2 nd means of egress is required or not.	Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<u>3. The elevator does not serve a required accessible floor or occupied roof more than four stories above or below the level of exit discharge.</u>					
EB25-22	<p>Revised as follows:</p> <p>306.7.1 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function. <u>Toilet facilities and drinking fountains serving the area of primary function, and the route from the area of primary function to these facilities, shall be accessible.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. The <u>cumulative costs of providing the accessible route, toilet facilities and drinking fountains</u> are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function. 2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs. 3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials. 4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility. 5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units. 		X			Clarification.
EB26-22	<p>Revised as follows:</p> <p>306.7.1 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function. <u>Priority shall be given to the improvements affecting the accessible route to the primary function area.</u></p> <p>Exceptions:</p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.</p> <p>2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.</p> <p>3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.</p> <p>4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.</p> <p>5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.</p>					
EB27-22	<p>Revised as follows: 306.7.7 Elevators. Altered elements of existing elevators shall comply with ASME A17.1. <u>Where the elevator emergency communication system is altered or replaced, that system shall comply with Section 3001.2 of the International Building Code.</u> Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.</p>			X	Minimal cost increase in altering/modifying elevator emergency comm. Equipment.	Enhance life safety,
EB28-22	<p>Added new text as follows: 306.7.8 Limited-use/Limited-application Elevators. Limited-use/Limited-application elevators installed in accordance with ASME A17.1 shall be permitted as a component of an accessible route.</p>		X			Clarification.
EB29-22	<p>Revise as follows: 306.7.8 Platform lifts. <u>Vertical and inclined</u> platform (wheelchair) lifts installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.</p>		X			Clarification.
EB31-22	<p>Added new text as follows: 306.7.14 Adult changing stations. Where additional toilet facilities are being added, in occupancies where adult changing stations are required by Section 1110.4.1 of the International Building Code, not fewer than one accessible family or assisted-use toilet room with an adult changing station shall be provided in accordance with Section 1110.4 of the IBC. The adult changing station shall be permitted to be located in an family or assisted-use toilet room or bathing room required by Sections 306.7.11, 306.7.12 or 306.7.13.</p>			X	Cost of adult changing table and increase in room size.	Adds adult changing table requirement to accessible toilet facilities.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
EB32-22	<p>Revised as follows:</p> <p>SECTION 308 CARBON MONOXIDE DETECTION</p> <p>308.1 Carbon monoxide detection. Where an addition, alteration, change of occupancy or relocation of a building is made to an <u>existing building Group I-1, I-2, I-4 and R occupancies and classrooms of Group E occupancies</u>, the existing building shall be provided with carbon monoxide detection in accordance with the International Fire Code or Section R315 of the International Residential Code.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks. 2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances. 3. Work classified as Level 1 Alterations in accordance with Chapter 7. 4. <u>In group I-2 Occupancies, carbon monoxide detection is not required in each sleeping unit where carbon monoxide detection, which transmits an alarm signal to an approved location, is provided in each space containing a carbon monoxide source.</u> 		X		Increases cost of source CO protection by \$----/unit.	Improves life safety by requiring CO detection across more occupancy types based upon presence of CO sources.
EB33-22	<p>Added new text as follows:</p> <p>309.2.1 Automatic sprinkler systems. Combustible exterior wall covering or combustible exterior wall envelopes shall not be added to an existing high-rise building that is not protected throughout with an automatic sprinkler system</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where such material is located on a single story and is less than 15 percent of the wall area on any side of the building. 2. Water-resistive barriers installed in accordance with Section 1402.5 of the International Building Code. 		X			Improves life safety.
EB35-22	<p>Revised as follows:</p> <p>401.2 Compliance. The work shall not make the building less complying than it was before the repair was undertaken. <u>Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to requirements for alterations.</u></p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
EB38-22	<p>Revised as follows: [BS] 405.1 General. Structural <u>damage repairs</u> shall be <u>repaired</u> in compliance with this section and Section 401.2.</p>		X			Clarification.
EB39-22	<p>Added new text as follows: 405.1.1 Structural Concrete repairs. Repair of structural <u>concrete shall be permitted to comply with ACI 562 Section 1.7, except where Section 405.2.2, 405.2.3 or 405.2.4.1 requires compliance with Section 304.3.</u></p>	X			ACI code allows more economic repair design.	Adds ACI code requirements for concrete repair.
EB41-22	<p>Revise as follows: [BS] 405.2.3.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building <u>including its foundation</u>, if repaired to its predamage state, would comply with the provisions of the International Building Code for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced seismic forces. [BS] 405.2.3.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 405.2.3.1, then the building, <u>including its foundation</u>, shall be retrofitted to comply with the provisions of this section. The wind loads for the repair and retrofit shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the International Building Code. The seismic loads for this retrofit design shall be those required by the building code in effect at the time of original construction, but not less than the reduced seismic forces. [BS] 405.2.4 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead, live and snow loads in the International Building Code. Undamaged gravity load-carrying components, <u>including undamaged foundation components</u>, that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the rehabilitation design.</p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
EB42-22	<p>Revised as follows: [BS] 405.2.4 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated <u>retrofitted</u> to comply with the applicable provisions for dead, live and snow loads in the International Building Code. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated <u>retrofitted</u> components shall also be rehabilitated <u>retrofitted</u> if required to comply with the these design loads of the rehabilitation design.</p>		X			Editorial.
EB43-22	<p>SECTION 406 ELECTRICAL Revised as follows: 406.1 Material General. Repairs to existing Existing electrical wiring and equipment undergoing repair shall be allowed to be repaired or replaced with like material in accordance with NFPA 70. Added new text as follows: 406.1.1 Reconditioned Electrical Equipment. <u>Reconditioned electrical equipment shall comply with NFPA 70. Electrical equipment prohibited from being reconditioned by the applicable sections of NFPA 70 shall not be reconditioned unless permitted by NFPA 99.</u> Deleted without substitution: 406.1.1 Receptacles. Replacement of electrical receptacles shall comply with the applicable requirements of Section 406.4(D) of NFPA 70. 406.1.2 Plug fuses. Plug fuses of the Edison-base type shall be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of Section 240.51(B) of NFPA 70. 406.1.3 Nongrounding type receptacles. For replacement of nongrounding type receptacles with grounding type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system or to any accessible point</p>		X		Clarification.	

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>on the grounding electrode conductor in accordance with Section 250.130(C) of NFPA 70.</p> <p>Revised as follows:</p> <p>406.1.4 406.1.2 Health care facilities. Portions of electrical systems being repaired in Group I-2, ambulatory care facilities and outpatient clinics shall comply with NFPA 99 requirements for repairs.</p> <p>Deleted without substitution:</p> <p>406.1.5 Grounding of appliances. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers and outlet or junction boxes that are part of the existing branch circuit for these appliances shall be permitted to be grounded to the grounded circuit conductor in accordance with Section 250.140 of NFPA 70.</p>					
EB44-22	<p>Revised as follows:</p> <p>502.1 General. Additions to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the addition are not less complying with the provisions of the International Building Code than the existing building or structure was prior to the addition, <u>except that the structural elements need only comply with Sections 502.2 through 502.5.</u> An existing building together with its additions shall comply with the height and area provisions of Chapter 5 of the International Building Code.</p> <p>503.1 General. Alterations to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations shall be such that the existing building or structure is not less complying with the provisions of the International Building Code than the existing building or structure was prior to the alteration, unless explicitly permitted elsewhere in this section <u>except that the structural elements need only comply with Sections 503.2 through 503.12.</u></p>		X			Clarification.
EB45-22	<p>Revise as follows:</p> <p>502.1 General. Additions to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building</p>	X			13.9% decrease in cost of elevator projects by a minimum of	Creates exception to building area and fire area

Table 7. 2024 IEBC Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p>or structure together with the addition are not less complying with the provisions of the International Building Code than the existing building or structure was prior to the addition. An existing building together with its additions shall comply with the height and area provisions of Chapter 5 of the International Building Code.</p> <p><u>Exception:</u> In-filling of floor openings and nonoccupiable appendages such as elevator and exit stairway shafts shall be permitted beyond that permitted by the International Building Code. Where an addition is an exit or exit access stairway or to provide an accessible route, the addition shall not be considered an area increase for compliance with this section.</p> <p>Revised as follows:</p> <p>1102.2 Area limitations. An addition shall not increase the area of an existing building beyond that permitted under the applicable provisions of Chapter 5 of the International Building Code for new buildings unless fire separation as required by the International Building Code is provided.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> In-filling of floor openings and nonoccupiable appendages such as elevator and exit stairway shafts shall be permitted beyond that permitted by the International Building Code. Where an addition is an exit or exit access stairway or to provide an accessible route, the addition shall not be considered an area increase for compliance with this section. <p>1102.3 Fire protection systems. Existing fire areas increased by the addition shall comply with Chapter 9 of the International Building Code.</p> <p><u>Exception:</u> In-filling of floor openings and nonoccupiable appendages such as elevator and exit stairway shafts shall be permitted beyond that permitted by the International Building Code. Where an addition is an exit or exit access stairway or to provide an accessible route, the addition shall not be considered an area increase for compliance with this section.</p> <p>1301.2.3 Additions. Additions to existing buildings shall comply with the requirements of the International Building Code or the International Residential Code for new construction. The combined height and area of the existing building and the new addition shall not exceed the height and area allowed by Chapter</p>				and does not include greater coverage areas, smoke detection requirements, and upgrades to construction due to building area increases.	requirements

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>5 of the International Building Code. Where a fire wall that complies with Section 706 of the International Building Code is provided between the addition and the existing building, the addition shall be considered a separate building.</p> <p><u>Exception: In-filling of floor openings and nonoccupiable appendages such as elevator and exit stairway shafts shall be permitted beyond that permitted by the International Building Code. Where an addition is an exit or exit access stairway or to provide an accessible route, the addition shall not be considered an area increase for compliance with this section.</u></p>					
EB46-22	<p>Revise as follows:</p> <p>502.1 General. Additions to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the addition are not less complying with the provisions of the International Building Code than the existing building or structure was prior to the addition. An existing building together with its additions shall comply with the height and area provisions of Chapter 5 of the International Building Code.</p> <p><u>Where a new occupiable roof is added to a building or structure, the occupiable roof shall comply with the provisions of the International Building Code.</u></p> <p>CHAPTER 11 ADDITIONS</p> <p>SECTION 1101</p> <p>GENERAL</p> <p>1101.1 Scope. An addition to a building or structure shall comply with the International Codes as adopted for new construction without requiring the existing building or structure to comply with any requirements of those codes or of these provisions, except as required by this chapter. Where an addition impacts the existing building or structure, that portion shall comply with this code.</p> <p>1101.2 Creation or extension of nonconformity. An addition shall not create or extend any nonconformity in the existing building to which the addition is being made with regard to accessibility, structural strength, fire safety, means of egress or the capacity of mechanical, plumbing or electrical systems.</p>		X			Clarification.

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1101.3 Other work. Any repair or alteration work within an existing building to which an addition is being made shall comply with the applicable requirements for the work as classified in Chapter 6.</p> <p>1101.4 Enhanced classroom acoustics. In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms in the addition with a volume of 20,000 cubic feet (565 m) or less. Enhanced classroom acoustics shall comply with the reverberation time in Section 808 of ICC A117.1.</p> <p>Added new text as follows: <u>1101.5 Occupiable Roofs.</u> Where a new occupiable roof is added to a building or structure, the occupiable roof shall comply with the provisions of the International Building Code.</p> <p>Revised as follows: 1301.2.3 Additions. Additions to existing buildings shall comply with the requirements of the International Building Code or the International Residential Code for new construction. The combined height and area of the existing building and the new addition shall not exceed the height and area allowed by Chapter 5 of the International Building Code. Where a fire wall that complies with Section 706 of the International Building Code is provided between the addition and the existing building, the addition shall be considered a separate building. <u>Where a new occupiable roof is added to a building or structure, the occupiable roof shall comply with the provisions of the International Building Code.</u></p>					
EB47-22	<p>Added new text as follows: 502.1.1 Risk category assignment. <u>Where the addition and the existing building have different occupancies, the risk category of each existing and added occupancy shall be determined in accordance with Section 1604.5.1 of the International Building Code. Where application of that section results in a higher risk category for the existing building, such a change shall be considered a change of occupancy and shall comply with Section 506 Chapter 10 of this code. Where application of that section results in a higher risk category for the addition, the addition and any systems in the existing building required to serve the addition shall comply with the requirements of the International Building Code for new construction for the higher risk category.</u></p>		X			Clarification.

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>1101.3 Risk category assignment.</u> Where the addition and the existing building have different occupancies, the risk category of each existing and added occupancy shall be determined in accordance with Section 1604.5.1 of the International Building Code. Where application of that section results in a higher risk category for the existing building, such a change shall be considered a change of occupancy and shall comply with Chapter 10 of this code. Where application of that section results in a higher risk category for the addition, the addition and any systems in the existing building required to serve the addition shall comply with the requirements of the International Building Code for new construction for the higher risk category.</p>					
EB48-22	<p>Add new text as follows:</p> <p>502.1.1 Creation or extension of nonconformity. An addition shall not create or extend any nonconformity in the existing building to which the addition is being made with regard to accessibility, structural strength, supports and attachments for nonstructural components, fire safety, means of egress or the capacity of mechanical, plumbing or electrical systems.</p> <p>Exception: Nonconforming supports and attachments for nonstructural components that serve the addition from within the existing building need not be altered to comply with International Building Code Section 1613 unless the components are part of the addition’s life safety system or are required to serve an addition assigned to Risk Category IV.</p> <p>Revised as follows:</p> <p>1101.2 Creation or extension of nonconformity. An addition shall not create or extend any nonconformity in the existing building to which the addition is being made with regards to accessibility, structural strength, supports and attachments for nonstructural components, fire safety, means of egress or the capacity of mechanical, plumbing or electrical systems.</p> <p>Exception: Nonconforming supports and attachments for nonstructural components that serve the addition from within the existing building need not be altered to comply with International Building Code Section 1613 unless the components are part of the addition’s life safety system or are required to serve an addition assigned to Risk Category IV.</p>		X			Clarification.

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		Decrease	None	Increase		
Sub Code:						
EB50-22	<p>Added new definition as follows: 202 LOWEST FLOOR. <u>The lowest floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the structure in violation of Section 1612 of the International Building Code or Section R322 of the International Residential Code, as applicable.</u></p> <p>Revised as follows: [BS] 502.3 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any addition that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any additions that do not constitute substantial improvement of the existing structure are not required to comply with the flood design requirements for new construction provided that both of the following apply:</p> <ol style="list-style-type: none"> <u>The addition shall not create or extend a nonconformity of the existing building or structure with the flood resistant construction requirements than the existing building or structure was prior to the addition.</u> <u>The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or structure or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</u> <p>[BS] 1103.3 Flood hazard areas. Additions and foundations in flood hazard areas shall comply with the following requirements:</p> <ol style="list-style-type: none"> For horizontal additions that are structurally interconnected to the existing building: <ol style="list-style-type: none"> 1.1. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing 		X			Clarification.

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>1.2. If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>1.3 If the addition does not constitute substantial improvement <u>the addition is not required to comply with the flood design requirements for new construction provided that both of the following apply:</u></p> <p>1.3.1 <u>The addition shall not create or extend any nonconformity of the existing building with the flood resistant construction requirements.</u></p> <p>1.3.2 <u>The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</u></p> <p>2. For horizontal additions that are not structurally interconnected to the existing building:</p> <p>2.1. T h e addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>2.2. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>3. For vertical additions and all other proposed work that, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>4. For a raised or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p>					

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		Decrease	None	Increase		
Sub Code:						
	<p>5. For a new foundation or replacement foundation, the foundation shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>[BS] 1301.3.3 Compliance with flood hazard provisions. In flood hazard areas, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable, if the work covered by this section constitutes substantial improvement. If the work covered by this section is a structurally connected horizontal addition that does not constitute substantial improvement, the addition is not required to comply with the flood design requirements for new construction provided that both of the following apply:</p> <p>1. The addition shall not create or extend any nonconformity of the existing building with the flood resistant construction requirements.</p> <p>2. The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p>					
EB51-22	<p>Revised as follows:</p> <p>[BS] 502.3 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any addition that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design. <u>For new foundations, foundations raised or extended upward, and replacement foundations, the foundations shall be in compliance with the requirements for new construction for flood design.</u></p> <p>For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any additions that do not constitute substantial improvement of the</p>			X	Incremental cost of adding additional height to a foundation that is already being replaced or raised or extended upward.	Lower risk of flood damage and lower NFIP flood insurance policy premiums.

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>existing structure are not required to comply with the flood design requirements for new construction.</p> <p>[BS] 1103.3 Flood hazard areas. Additions and foundations in flood hazard areas shall comply with the following requirements:</p> <p>1. For horizontal additions that are structurally interconnected to the existing building:</p> <p> 1.1. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p> 1.2. If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>2. For horizontal additions that are not structurally interconnected to the existing building:</p> <p> 2.1. The addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p> 2.2. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>3. For vertical additions and all other proposed work that, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p>4. For a raised or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.</p> <p><u>4. 5. For a new foundation, or replacement foundation, or a foundation raised or extended upward, the foundation shall comply with Section 1612 of the International Building Code,</u></p>					

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		Decrease	None	Increase		
Sub Code:						
	or Section R322 of the International Residential Code, as applicable.					
EB56-22	<p>Added new text as follows:</p> <p>502.5 Smoke Barriers in Group I-1, Condition 2. Where an addition to an existing Group I-1, Condition 2 building adds sleeping areas that result in more than 50 care recipients on a story, smoke barriers shall be provided to subdivide such story into not fewer than two smoke compartments in accordance with Section 420.6 of the International Building Code.</p> <p>Exception: Where the existing building is divided into smoke compartments, and the addition does not result in any individual smoke compartment exceeding the size and travel distance requirements in Section 420.6 of the International Building Code, additional smoke barriers are not required.</p> <p>1101.4 Smoke Barriers in Group I-1, Condition 2. Where an addition to an existing Group I-1, Condition 2 building adds sleeping areas that result in more than 50 care recipients on a story, smoke barriers shall be provided to subdivide such story into not fewer than two smoke compartments in accordance with Section 420.6 of the International Building Code.</p> <p>Exception: Where the existing building is divided into smoke compartments, and the addition does not result in any individual smoke compartment exceeding the size and travel distance requirements in Section 420.6 of the International Building Code, additional smoke barriers are not required.</p>			X	Depends on adequacy of existing smoke compartments	Improves life safety by adding threshold for the addition of smoke compartments in care facilities.
EB61-22	<p>Revise as follows:</p> <p>[BS] 502.5 Existing structural elements carrying lateral load. Where the addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall be shown to meet the requirements of Sections 1609 and 1613 of the International Building Code using full seismic forces.</p> <p>Exceptions:</p> <p>1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-</p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p>capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction. <u>When calculating demand capacity ratios for wind, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 1609 of the International Building Code or the code wind forces in effect at the time. When calculating demand-capacity ratios for earthquake, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 304.3.1 or the full seismic forces in effect at the time.</u></p> <p>2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.</p> <p>[BS] 503.4 Existing structural elements carrying lateral load. Except as permitted by Section 503.13, where the alteration increases design lateral loads, results in a prohibited structural irregularity as defined in ASCE 7, or decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.</p> <p>Exceptions:</p> <p>1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider</p>					

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		Decrease	None	Increase		
		Sub Code:				
	<p>applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction. <u>When calculating demand-capacity ratios for wind, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 1609 of the International Building Code or the code wind forces in effect at the time. When calculating demand-capacity ratios for earthquake, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 304.3.1 or Section 304.3.2 item 1 or item 3 or the full or reduced seismic forces in effect at the time.</u></p> <p>2. Buildings in which the increase in the demand-capacity ratio is due entirely to the addition of rooftop-supported mechanical equipment individually having an operating weight less than 400 pounds (181.4 kg) and where the total additional weight of all rooftop equipment placed after initial construction of the building is less than 10 percent of the roof dead load. For purposes of this exception, "roof" shall mean the roof level above a particular story.</p> <p>[BS] 805.3 Existing structural elements resisting lateral loads. Except as permitted by Section 805.4, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.</p> <p>Exception: Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating</p>					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction. <u>When calculating demand-capacity ratios for wind, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 1609 of the International Building Code or the code wind forces in effect at the time. When calculating demand-capacity ratios for earthquake, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 304.3.1 or Section 304.3.2 item 1 or item 3 or the full or reduced seismic forces in effect at the time.</u></p> <p>[BS] 1103.2 Lateral force-resisting system. Where the addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code using full seismic forces.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load 					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction. <u>When calculating demand capacity ratios for wind, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 1609 of the International Building Code or the code wind forces in effect at the time. When calculating demand-capacity ratios for earthquake, the date of original construction shall be permitted to be taken as the date of completion of a prior addition, alteration, or repair in compliance with Section 304.3.1 or the full seismic forces in effect at the time.</u></p>					
E63-22	<p>Revise as follows: [BS] 503.4 Existing structural elements carrying lateral load. Except as permitted by Section 503.13, where the alteration increases design lateral loads, results in a prohibited structural irregularity as defined in ASCE 7, or decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.</p> <p>Exceptions: 1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. <u>The same methodology shall be used for the altered and unaltered structures.</u> For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative</p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>effects of additions and alterations since original construction.</p> <p>2. Buildings in which the increase in the demand-capacity ratio is due entirely to the addition of rooftop-supported mechanical equipment individually having an operating weight less than 400 pounds (181.4 kg) and where the total additional weight of all rooftop equipment placed after initial construction of the building is less than 10 percent of the roof dead load. For purposes of this exception, "roof" shall mean the roof level above a particular story.</p> <p>[BS] 805.3 Existing structural elements resisting lateral loads. Except as permitted by Section 805.4, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.</p> <p>Exception: Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. <u>The same methodology shall be used for the altered and unaltered structures.</u> For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.</p>					
EB64-22	<p>Added new definition as follows: 202 PHOTOVOLTAIC PANEL SYSTEM. A system that incorporates discrete photovoltaic panels, that converts solar radiation into electricity, including rack support systems.</p> <p>Revised as follows: [BS] 503.4 Existing structural elements carrying lateral load. Except as permitted by Section 503.13, where the alteration</p>	X			Cost reduced due to less need for extensive engineering analysis.	Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>increases design lateral loads, results in a prohibited structural irregularity as defined in ASCE 7, or decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction. Buildings in which the increase in the demand-capacity ratio is due entirely to the addition of rooftop-supported mechanical equipment individually having an operating weight less than 400 pounds (181.4 kg) and where the total additional weight of all rooftop equipment placed after initial construction of the building is less than 10 percent of the roof dead load. For purposes of this exception, "roof" shall mean the roof level above a particular story. <u>Increases in the demand-capacity ratio due to lateral loads from seismic forces need not be evaluated for the installation of rooftop photovoltaic panel systems where the additional roof dead load due to the system, including ballast where applicable, does not exceed 5 psf and does not exceed 10% of the dead load of the existing roof.</u> <p>[BS] 805.3 Existing structural elements resisting lateral loads. Except as permitted by Section 805.4, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-</p>					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.</p> <p>Exception:</p> <p>1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.</p> <p>2. <u>Buildings in which the increase in the demand-capacity ratio is due entirely to the addition of rooftop-supported mechanical equipment individually having an operating weight less than 400 pounds (181.4 kg) and where the total additional weight of all rooftop equipment placed after initial construction of the building is less than 10 percent of the roof dead load. For purposes of this exception, "roof" shall mean the roof level above a particular story.</u></p> <p>3. <u>Increases in the demand-capacity ratio due to lateral loads from seismic forces need not be evaluated for the installation of rooftop photovoltaic panel systems where the additional roof dead load due to the system, including ballast where applicable, does not exceed 5 psf and does not exceed 10% of the dead load of the existing roof.</u></p>					
EB67-22	<p>Revise as follows:</p> <p>[BS] 503.12 Roof diaphragms resisting wind loads in high-wind regions. Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate design basic wind speed, V_b, is greater than 130 mph (58 m/s) in accordance with Figure</p>		X			Editorial.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1609.3(1) <u>1609.3(2)</u> of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in Section 1609 of the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in Section 1609 of the International Building Code.</p> <p>Exception: Buildings that have been demonstrated to comply with the wind load provisions in ASCE 7—88 or later editions.</p> <p>[BS] 706.3.2 Roof diaphragms resisting wind loads in high-wind regions. Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design basic wind speed, V_{ult}, V, is greater than 130 mph (58 m/s) determined in accordance with Figure 1609.3(1) <u>1609.3(2)</u> of the International Building Code, is greater than 130 mph (58 m/s), roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.</p> <p>Exception: Buildings that have been demonstrated to comply with the wind load provisions in ASCE 7—88 or later editions.</p> <p>[BS] C201.1 Purpose. This chapter provides prescriptive methods for partial structural retrofit of an existing building to increase its resistance to wind loads. It is intended for voluntary use where the ultimate design basic wind speed, V_{ult}, V, is greater than 130 mph (58 m/s) determined in accordance with Figure 1609.3(1) <u>1609.3(2)</u> of the International Building Code, exceeds 130 mph (58 m/s) and for reference by mitigation programs. The provisions of this chapter do not necessarily satisfy requirements for new construction. Unless specifically cited, the provisions of this chapter do not necessarily satisfy requirements for structural improvements triggered by addition, alteration, repair, change of occupancy, building relocation or other circumstances.</p>					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
EB68-22	<p>Revise as follows:</p> <p>[BS] 503.13 Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be <u>subject to the structural requirements of Section 503</u> required to meet the requirements of Section 1609 or 1613 of the International Building Code, provided that all of the following apply:</p> <ol style="list-style-type: none"> With the alteration complete, the The capacity of existing structural systems to resist forces is not reduced. New structural elements are detailed and connected to existing or new structural elements as required by the selected design criteria International Building Code for new construction. <u>Supports and attachments for New or relocated nonstructural elements removed and reinstalled to facilitate the work comply</u> with are detailed and connected to existing or new structural elements as required by the International Building Code for new construction. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe. <p>[BS] 805.4 Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be <u>subject to the structural requirements of this chapter or Chapter 7</u> required to meet the requirements of Section 1609 or Section 1613 of the International Building Code, provided that the following conditions are met:</p> <ol style="list-style-type: none"> With the alteration complete, the The capacity of existing structural systems to resist forces is not reduced. New structural elements are detailed and connected to existing or new structural elements as required by the <u>selected design criteria</u> International Building Code for new construction <u>Supports and attachments for New or relocated nonstructural elements removed and reinstalled to facilitate the work comply with</u> are detailed and connected to existing 		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>or new structural elements as required by the International Building Code for new construction.</p> <p>4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.</p>					
EB69-22	<p>Revised as follows:</p> <p>[BS] 503.13 Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be required to meet the requirements of Section 1609 or 1613 of the International Building Code, provided that all of the following apply:</p> <ol style="list-style-type: none"> 1. The capacity of existing structural systems to resist forces is not reduced. 2. New structural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction. 3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction. 4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe. <p><u>Exception: Condition 4 need not be satisfied where the work complies with Section 304.3.2 Item 3.</u></p> <p>[BS] 805.4 Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be required to meet the requirements of Section 1609 or Section 1613 of the International Building Code, provided that the following conditions are met:</p> <ol style="list-style-type: none"> 1. The capacity of existing structural systems to resist forces is not reduced. 2. New structural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction. 		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.</p> <p>4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.</p> <p>Exception: Condition 4 need not be satisfied where the work complies with Section 304.3.2 Item 3.</p>					
EB71-22	<p>Added new definition as follows: <u>202 AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable.</u></p> <p>Revised as follows: 503.15 Refuge areas. Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below the required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities shall not be reduced below that required in Sections 407.5.3, 408.6.2, 420.6.1 and 422.3.2 of the International Building Code, as applicable. 804.11 Refuge areas. Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below the required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities shall not be reduced below that required in Sections 407.5.3, 408.6.2, 420.6.1 and 422.3.2 of the International Building Code, as applicable.</p>		X			Clarification.
EB72-22	<p>Added new text as follows: <u>503.16 Conditions for I-1 Occupancies. Group I-1 Occupancies that are being altered and where the work area is greater than 50 percent of the aggregate building area, shall be classified as</u></p>			X	Cost increases depend on design changes	Improves life safety by requiring smoke barriers in

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>Condition 1 or Condition 2 in accordance with Section 308.2 of the International Building Code.</u></p> <p>503.16.1 Smoke Barriers in Group I-1, Condition 2. In Group I-1, Condition 2 occupancies where the work area is on a story used for sleeping rooms for more than 30 care recipients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 420.6 of the International Building Code.</p> <p>902.2 Conditions for I-1 Occupancies. Group I-1 Occupancies shall be classified as Condition 1 or Condition 2 in accordance with Section 308.2 of the International Building Code.</p> <p>902.2.1 Smoke Barriers in Group I-1, Condition 2. In Group I-1, Condition 2 occupancies where the work area is on a story used for sleeping rooms for more than 30 care recipients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 420.6 of the International Building Code.</p>				during alteration.	for certain alteration levels.
EB73-22	<p>Added new text as follows:</p> <p><u>503.16 Ambulatory care facilities. Where a work area exceeds 50 percent of the building area and the work area includes an existing ambulatory care facility, the following shall be provided:</u></p> <ol style="list-style-type: none"> 1. A smoke compartment in accordance with Section 422.3 of the International Building Code where the alteration results in an ambulatory care facility greater than 10,000 square feet on one story. 2. Separation from adjacent spaces in accordance with Section 422.2 of the International Building Code, where any such facility has the potential for four or more care recipients are to be incapable of self-preservation at any time. <p><u>902.3 Ambulatory care facilities. Where a Level 3 work area includes an existing ambulatory care facility, the following shall be provided:</u></p> <ol style="list-style-type: none"> 1. A smoke compartment in accordance with Section 422.3 of the International Building Code where the alteration results in an ambulatory care facility greater than 10,000 square feet on one story. 2. Separation from adjacent spaces in accordance with Section 422.2 of the International Building Code, where any such facility has the potential for four or more care recipients are to be incapable of self-preservation at any time. 			X	Increases cost only when ambulatory facilities undergo substantial alterations.	Requires improved life safety when ambulatory facilities undergo substantial alterations.

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
EB74-22	<p>Revised as follows: 505.2 Window <u>fall prevention</u> opening control devices on replacement windows. In Group R-2 or R-3 buildings containing dwelling units, and one- and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices or <u>other window</u> fall prevention devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:</p> <p>.....</p> <p>702.4 Window <u>fall prevention</u> opening control devices on replacement windows. In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices or <u>other window fall prevention devices</u> complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:</p> <p>.....</p>		X			Clarification.
E78-22	<p>Revised as follows: 601.1 Scope. The provisions of this chapter shall be used in conjunction with Chapters 7 through 12 and shall apply to the alteration, addition and change of occupancy of existing structures, including historic and moved structures, as referenced in Section 301.3.2. The work performed on an existing building shall be classified in accordance with this chapter.</p>		X			Clarification.
EB80-22	<p>Revise as follows: 803.2.2 Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where both of the following conditions occur:</p> <ol style="list-style-type: none"> 1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction. 2. The work area exceeds 50 percent of the floor area. <p>Exception: If the building does not have <u>an existing</u> sufficient municipal water supply <u>present at for the floor of the proposed</u></p>		X			Clarification.

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>work area with sufficient pressure and flow for the design of a fire sprinkler system available to the floor and without installation of a new fire pump, the work areas shall be protected by an automatic smoke detection system throughout all occupiable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the International Building Code.</u></p> <p>803.2.5 Other required automatic sprinkler systems. In buildings and areas listed in Table 903.2.11.6 of the International Building Code, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:</p> <ol style="list-style-type: none"> 1. The work area is required to be provided with an automatic sprinkler system in accordance with the International Building Code applicable to new construction; and 2. The building has <u>an existing sufficient municipal water supply present at for the floor of the proposed work area with sufficient pressure and flow for the design of an automatic sprinkler system available to the floor and without installation of a new fire pump.</u> 					
EB81-22	<p>Revised as follows:</p> <p>803.2.6 Supervision. <u>Automatic Fire-sprinkler systems required by this section shall be provided with supervision and alarms supervised in accordance with Section 903.4 of the International Building Code. by one of the following methods:</u></p> <ol style="list-style-type: none"> 1. Approved central station system in accordance with NFPA 72 2. Approved proprietary system in accordance with NFPA 72. 3. Approved remote station system of the jurisdiction in accordance with NFPA 72. 4. Where approved by the code official, approved local alarm service that will cause the sounding of an alarm in accordance with NFPA 72. <p>Exception: Supervision is not required for the following:</p> <ol style="list-style-type: none"> 1. Underground key or hub gate valves in roadway boxes. 2. Halogenated extinguishing systems. 3. Carbon dioxide extinguishing systems. 4. Dry and wet chemical extinguishing systems. 	X			Correlation across codes reduces costs.	Correlates the supervision requirement across the IEBC, IBC, and IEBC

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CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	5. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic and automatic sprinkler systems and a separate shutoff valve for the automatic sprinkler system is not provided.					
EB82-22	<p>Revise as follows:</p> <p>803.4 Fire alarm and detection. An approved fire alarm system shall be installed in accordance with Sections 803.4.1 through 803.4.2 <u>803.4.3</u>. Where automatic sprinkler protection is provided in accordance with Section 803.2 and is connected to the building fire alarm system, automatic heat detection shall not be required.</p> <p>An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances, and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms, where products of combustion are present during normal operation in sufficient quantity to actuate a smoke detector.</p> <p>803.4.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 803.4.1.1 through 803.4.1.6. Existing alarm-notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm-notification appliances within the work area shall be provided and automatically activated.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Occupancies with an existing, previously approved fire alarm system. Where selective notification is permitted, alarm-notification appliances shall be automatically activated in the areas selected. <p>Revised as follows:</p> <p>803.4.1.1 Group E. A fire alarm system shall be installed in work areas of Group E occupancies as required by Chapter 11 of the International Fire Code for existing Group E occupancies.</p> <p>803.4.1.5 Group R-1. A fire alarm system shall be installed in Group R-1 occupancies as required by Chapter 11 of the International Fire Code for existing Group R-1 occupancies.</p>		X			Clarification.

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		Decrease	None	Increase		
Sub Code:						
	<p>803.4.2 Supplemental fire alarm system requirements. Where the work area on any floor exceeds 50 percent of that floor area, Section 803.4.1 shall apply throughout the floor.</p> <p>Exception: Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the work area.</p> <p>Added new text as follows:</p> <p>803.4.3 Installation. Where a fire alarm system is required to be installed in accordance with Sections 803.4.1 or 803.4.2 the fire alarm system shall be installed in accordance with the provisions of this code, Section 907 of the International Building Code and NFPA 72.</p>					
EB83-22	<p>804.4 Number of exits. The number of exits shall be in accordance with Sections 804.4.1 through 804.4.3.</p> <p>Revise as follows:</p> <p>804.4.1 Minimum number. Every story or <u>occupiable roof</u> utilized for human occupancy on which there is a work area that includes exits or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the International Building Code. In addition, the exits shall comply with Sections 804.4.1.1 and 804.4.1.2.</p> <p>804.4.1.1 Single-exit buildings. A single exit or access to a single exit shall be permitted from spaces, any story or any occupied occupiable roof where one of the following conditions exists:</p> <ol style="list-style-type: none"> 1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 804.4.1.1(1) or Table 804.4.1.1(2). 2. In Group R-1 or R-2, buildings without an approved automatic sprinkler system, individual single-story or multiple-story dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met: <ol style="list-style-type: none"> 2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm). 2.2. The building is not more than three stories in height; all third-story space is part of dwelling with an exit access doorway on the second story; and the portion of the exit access travel distance from the door to any habitable room 		X		Clarification.	

Table 7. 2024 IEBC Changes Cost Impact

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	<p>within any such unit to the unit entrance doors does not exceed 50 feet (15 240 mm).</p> <p>3. In buildings of Group R-2 occupancy of any number of stories with not more than four dwelling units per floor served by an interior exit stairway; with a smokeproof enclosure in accordance with Sections 909.20 and 1023.12 of the International Building Code or an exterior stairway as an exit; and where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is not greater than 20 feet (6096 mm).</p> <p>TABLE 804.4.1.1(1) STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES</p> <table border="1"> <thead> <tr> <th>STORY OR OCCUPIABLE ROOF</th> <th>OCCUPANCY</th> <th>MAXIMUM NUMBER OF DWELLING UNITS</th> <th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)</th> </tr> </thead> <tbody> <tr> <td>Basement, first, or second or third story above grade plane and occupiable roofs over the first or second floor above grade plane</td> <td>R-2^{a, b, c}</td> <td>4 dwelling units</td> <td>60-125 feet</td> </tr> <tr> <td>Third-Fourth story above grade plane and higher</td> <td>NP</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table> <p>For SI: 1 foot = 304.8 mm. NP = Not Permitted. NA = Not Applicable.</p> <p>a. <u>Buildings classified as Group R-2, equipped without an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Fire Code and provided with emergency escape and rescue openings in accordance with Section 1031 of the International Building Code.</u></p> <p>b. <u>This table is used for Group R-2 occupancies consisting of dwelling units. For Group R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2) of the International Building Code.</u></p> <p>c. <u>This table is for occupiable roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupiable roofs that are not access through and serving individual units, use Table 804.4.1.1(2).</u></p> <p>TABLE 804.4.1.1(2) STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES</p> <table border="1"> <thead> <tr> <th>STORY OR OCCUPIABLE ROOF</th> <th>OCCUPANCY</th> <th>MAXIMUM OCCUPANT LOAD PER STORY</th> <th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">First story above or below grade plane or occupiable roofs over the first story above grade plane</td> <td>B^a, F-2^b, S-2^a</td> <td>95-49</td> <td>75</td> </tr> <tr> <td>S-2 ^{a2}</td> <td>35</td> <td>75</td> </tr> <tr> <td>Second story above grade plane</td> <td>B, F-2, S-2^a</td> <td>35</td> <td>75</td> </tr> <tr> <td>Third story above grade plane and higher</td> <td>NP</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table> <p>For SI: 1 foot = 304.8 mm. NP = Not Permitted. NA = Not Applicable.</p> <p>a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet.</p>	STORY OR OCCUPIABLE ROOF	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)	Basement, first, or second or third story above grade plane and occupiable roofs over the first or second floor above grade plane	R-2 ^{a, b, c}	4 dwelling units	60-125 feet	Third-Fourth story above grade plane and higher	NP	NA	NA	STORY OR OCCUPIABLE ROOF	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)	First story above or below grade plane or occupiable roofs over the first story above grade plane	B ^a , F-2 ^b , S-2 ^a	95-49	75	S-2 ^{a2}	35	75	Second story above grade plane	B, F-2, S-2 ^a	35	75	Third story above grade plane and higher	NP	NA	NA					
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	<u>b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or on the roof of such buildings shall have a maximum exit access travel distance of 100 feet.</u>					
EB84-22	<p>Revise as follows:</p> <p>804.4.1 Minimum number. Every story or <u>occupiable</u> occupied roof utilized for human occupancy on which there is a work area that includes exits or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the International Building Code. In addition, the exits shall comply with Sections 804.4.1.1 and 804.4.1.2.</p> <p>804.4.1.1 Single-exit buildings. A single exit or access to a single exit shall be permitted from spaces, any story or any occupied <u>occupiable</u> roof where one of the following conditions exists:</p> <ol style="list-style-type: none"> 1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 804.4.1.1(1) or Table 804.4.1.1(2). 2. In Group R-1 or R-2, buildings without an approved automatic sprinkler system, individual single-story or multiple-story dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met: <ol style="list-style-type: none"> 2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm). 2.2. The building is not more than three stories in height; all third-story space is part of dwelling with an exit access doorway on the second story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance doors does not exceed 50 feet (15 240 mm). 3. In buildings of Group R-2 occupancy of any number of stories with not more than four dwelling units per floor served by an interior exit stairway; with a smokeproof enclosure in accordance with Sections 909.20 and 1023.12 of the International Building Code or an exterior stairway as an exit; and where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is not greater than 20 feet (6096 mm). 		X			Consistency

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	<p>902.1 High-rise buildings. Any building having occupied floors or occupiable roof more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall comply with the requirements of Sections 902.1.1 and 902.1.2.</p> <p>TABLE 804.4.1.1(1) STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES</p> <table border="1"> <thead> <tr> <th>STORY OR OCCUPIABLE ROOF</th> <th>OCCUPANCY</th> <th>MAXIMUM NUMBER OF DWELLING UNITS</th> <th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)</th> </tr> </thead> <tbody> <tr> <td>Basement, first, or second or third story above grade plane and occupiable roofs over the first or second floor above grade plane</td> <td>R-2^{a, b, c}</td> <td>4 dwelling units</td> <td>50-125 feet</td> </tr> <tr> <td>Third-Fourth story above grade plane and higher</td> <td>NP</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table> <p>For SI: 1 foot = 304.8 mm. NP = Not Permitted. For SI: 1 foot = 304.8 mm. NP = Not Permitted. NA = Not Applicable.</p> <p>a. <u>Buildings classified as Group R-2, equipped without an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Fire Code and provided with emergency escape and rescue openings in accordance with Section 1031 of the International Building Code.</u></p> <p>b. <u>This table is used for Group R-2 occupancies consisting of dwelling units. For Group R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2) of the International Building Code.</u></p> <p>c. <u>This table is for occupiable roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupiable roofs that are not access through and serving individual units, use Table 804.4.1.1(2).</u></p> <p>TABLE 804.4.1.1(2) STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES</p>	STORY OR OCCUPIABLE ROOF	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)	Basement, first, or second or third story above grade plane and occupiable roofs over the first or second floor above grade plane	R-2 ^{a, b, c}	4 dwelling units	50-125 feet	Third-Fourth story above grade plane and higher	NP	NA	NA					
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EB85-22	<p>Revise as follows: 804.4 Number of exits. The number of exits <u>or access to exits</u> shall be in accordance with Sections 804.4.1 through 804.4.3. 804.4.1 Minimum number. Every story utilized for human occupancy on which there is a work area that includes exits, <u>access to exits</u>, or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits <u>or access to exits</u> based on the occupancy and the occupant load in accordance with the International Building Code. In addition, the exits shall comply with Sections 804.4.1.1 and 804.4.1.2.</p>		X				Consistency																			
EB86-22	<p>Revise as follows: 804.5.2 Door swing. In the work area and in the egress path from any work area to the exit discharge, all egress doors serving an occupant load <u>greater than of 50 or more</u> shall swing in the direction of exit travel.</p>		X				Consistency																			
EB87-22	<p>Add new text as follows: 804.11 Stairways. An existing stairway shall not be required to <u>comply with the requirements of Section 1011 of the International Building Code where the existing space and construction does not allow a reduction in pitch or slope.</u> 804.12 Escalators. Where <u>provided in below-grade transportation stations, existing and new escalators shall be permitted to have a clear width of less than 32 inches (815 mm).</u> Revise as follows: 804.10 804.13 Handrails. The requirements of Sections 804.10.1 804.13.1 and 804.10.2 804.13.2 shall apply to handrails from the work area floor to, and including, the level of exit discharge.</p>		X				Correlates across design methods.																			

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	<p>804.10.1 804.13.1 Minimum requirement. Every required exit stairway that is part of the means of egress for any work area and that has three or more risers and is not provided with not fewer than one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails for the full length of the stairway on not fewer than one side. Exit stairways with a required egress width of more than 66 inches (1676 mm) shall have handrails on both sides.</p> <p>804.10.2 804.13.2 Design. Handrails required in accordance with Section 804.10.1 <u>804.13.1</u> shall be designed and installed in accordance with the provisions of the International Building Code.</p> <p>Exception: <u>Handrails otherwise required to comply with Section 1011.11 of the International Building Code shall not be required to comply with the requirements of Section 1014.6 of the International Building Code regarding full extension of the handrails where such extensions would be hazardous because of plan configuration.</u></p> <p>804.12 804.14 Guards. The requirements of Sections 804.12.1 <u>804.14.1</u> and 804.12.2 <u>804.14.2</u> shall apply to guards from the work area floor to, and including, the level of exit discharge but shall be confined to the egress path of any work area.</p> <p>804.12.1 804.14.1 Minimum requirement. Every open portion of a stairway, landing, or balcony that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.</p> <p>804.12.2 804.14.2 Design. Guards required in accordance with Section 804.12.1 <u>804.14.1</u> shall be designed and installed in accordance with the International Building Code.</p> <p>804.11 804.4 Refuge areas. Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below the required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities shall not be reduced below that required in Sections 407.5.3, 408.6.2, 420.6.1 and 422.3.2 of the International Building Code, as applicable.</p>					

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EB88-22	<p>Add new text as follows: 904.1.8 Supervision and Alarms. Where an automatic sprinkler system is required by Sections 904.1.1 through 904.1.7 such systems shall be provided with supervision and alarms in accordance with Section 903.4 of the International Building Code.</p>			X	If existing automatic sprinkler system not supervised electronically.	Consistency.
EB91-22	<p>Add new text as follows: SECTION 908 EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEM COVERAGE 908.1 Emergency Responder Communication Enhancement System Coverage. The existing building shall undergo an evaluation of the emergency responder communication signal strength and coverage area within the entire building in accordance with 908.1.1 and 908.1.2. <u>Exception: Where it is determined by the fire code official that the emergency responder communication enhancement system (ERCES) is not needed.</u> 908.1.1 Evaluation. The evaluation shall determine the current signal strength and coverage capabilities of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building. 908.1.2 Compliance. The evaluation report shall be submitted for approval by the fire code official and the frequency license holder. Where the coverage area, signal strength or DAQ does not comply with Section 510 of the International Fire Code, the existing building shall be provided with emergency responder communication enhancement system coverage. The fire code official is authorized to establish the timeframe for such installation or modification.</p>			X	\$1,000 for evaluation and the cost of installation or replacement if needed for Level 3 alterations.	Consistency.
EB92-22	<p>Revise as follows: 1001.2.1 Change of use. Any work undertaken in connection with a change in use <u>change of use</u> that does not involve a change of occupancy classification or a change to another group within an occupancy classification shall conform to the applicable requirements for the work as classified in Chapter 6 and to the requirements of Sections 1002 through 1010. <u>Exception: As modified in Section 1204 for historic buildings.</u> 1001.2.2 Change of occupancy classification or group. Where a building undergoes a change of occupancy classification the</p>		X			Consistency.

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	<p>occupancy classification of a building changes, the provisions of Sections 1002 through 1011 shall apply. This includes a change of occupancy classification and a change to another group within an occupancy classification.</p> <p>1001.2.2.1 Partial change of occupancy. <u>Where a portion of an existing building undergoes a change of occupancy classification the occupancy classification or group of a portion of an existing building is changed,</u> Section 1011 shall apply.</p>					
EB93-22	<p>Revise as follows:</p> <p>1001.2 Certificate of occupancy. A change of occupancy or a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the <u>current International Building Code than exists in the current building or space</u> shall not be made to any structure without the approval of the code official. A certificate of occupancy shall be issued where it has been determined that the requirements for the change of occupancy have been met.</p> <p>1004.1 General. Fire protection requirements of in Section 1011 shall apply where either of the following occur:</p> <p>1. a <u>A building, or portions thereof, undergo</u> undergoes a change of occupancy classification or where</p> <p>2. there is a <u>A building, or portion thereof, undergoes</u> a change of occupancy within a space where <u>and</u> there is a different fire protection system threshold requirement in Chapter 9 of the <u>current International Building Code than exists in the current building or portion thereof.</u></p> <p>1011.1 General. The provisions of this section shall apply to buildings or portions thereof undergoing a change of occupancy classification. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group. <u>The provisions of this section shall also apply</u> or where there is a change of occupancy within a space where <u>building or portion thereof and</u> there is a different fire protection system threshold requirement in Chapter 9 of the current International Building Code <u>than exists in the current building or space.</u> Such buildings shall also comply with Sections 1002 through 1010 of this code.</p> <p>1011.2 Fire protection systems. Fire protection systems shall be provided in accordance with Sections 1011.2.1 and 1011.2.2.</p>		X		Clarification.	

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	<p>1011.2.1 Fire sprinkler system. Where a change in occupancy classification occurs or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the <u>current</u> International Building Code <u>than exists in the current building or space</u> that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the International Building Code. The installation of the automatic sprinkler system shall be required within the area of the change of occupancy and areas of the building not separated horizontally and vertically from the change of occupancy by one of the following:</p> <ol style="list-style-type: none"> 1. Nonrated permanent partition and horizontal assemblies. 2. Fire partition. 3. Smoke partition. 4. Smoke barrier. 5. Fire barrier. 6. Fire wall. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. An automatic sprinkler system shall not be required in a one- or two-family dwelling constructed in accordance with the International Residential Code. 2. Automatic sprinkler system shall not be required in a townhouse constructed in accordance with the International Residential Code. 3. The townhouse shall be separated from adjoining units in accordance with Section R302.2 of the International Residential Code. <p>1011.2.2 Fire alarm and detection system. Where a change in occupancy classification occurs or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the <u>current</u> International Building Code <u>than exists in the current building or space</u> that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the International Building Code, such system shall</p>					

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	be provided throughout the area where the change of occupancy occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the change of occupancy occurs in accordance with Section 907 of the International Building Code as required for new construction.					
EB94-22	<p>Revise as follows:</p> <p>1002.1 Compliance with the building code. Where an existing building or part of an existing building undergoes a change of occupancy to one of the special use or occupancy categories as described in Chapter 4 in the International Building Code, the building shall comply with all of the requirements of Chapter 4 of the International Building Code applicable to the special use or occupancy.</p> <p><u>Exception: Where construction of a new occupiable roof on an existing building results in a high-rise building classification and the occupiable roof has an occupant load less than 50, compliance with Section 403 of the International Building Code shall not be required. The construction of the occupiable roof shall comply with Section 1011.</u></p>	X			Removes the need for costly and complex upgrades that would be required for compliance with IBC Section 403 when retroactively making a roof occupiable.	Reduces cost but limits for roof allowing less than 50 occupants.
EB95-22	<p>1002.3 Change of occupancy in health care. Where a change of occupancy occurs to a Group I-2 or I-1 facility, the work area with the change of occupancy shall comply with the International Building Code.</p> <p>Exception Exceptions:</p> <p>1. A change in use or occupancy in the following cases shall not be required to meet the International Building Code:</p> <p>1.1. Group I-2, Condition 2 to Group I-2, Condition 1.</p> <p>1.2. Group I-2 to ambulatory health care.</p> <p>1.3. Group I-2 to Group I-1.</p> <p>1.4. Group I-1, Condition 2 to Group I-1, Condition 1.</p> <p>2. <u>In a Group I-1 occupancy, where a change of use is not in conjunction with a Level 3 alteration, a smoke barrier in accordance with Section 420.6 of the IBC is not required to be added.</u></p>			X	Cost increase if smoke barrier needs to be installed for Level 3 alterations.	Clarification
EB96-22	<p>Revise as follows:</p> <p>1011.2.1 Fire sprinkler system. Where a change in occupancy classification occurs or where there is a change of occupancy</p>		X			Editorial.

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		Decrease	None	Increase		
Sub Code:						
	<p>within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the International Building Code. The installation of an automatic sprinkler system shall be required where there is a change of occupancy classification and Chapter 9 of the International Building Code requires an automatic fire sprinkler system based on the new occupancy or where there is a change of occupancy within the space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code .The installation of the automatic sprinkler system shall be required within the area of the change of occupancy and areas of the building not separated horizontally and vertically from the change of occupancy by a nonrated permanent partition and horizontal assemblies, fire partition, smoke partition, smoke barrier, fire barrier, or fire wall. one of the following:</p> <p>1. Nonrated permanent partition and horizontal assemblies.</p> <p>2. Fire partition.</p> <p>3. Smoke partition.</p> <p>4. Smoke barrier.</p> <p>5. Fire barrier.</p> <p>6. Fire wall.</p> <p>Exceptions:</p> <p>1. An automatic sprinkler system shall not be required in a one- or two-family dwelling constructed in accordance with the International Residential Code.</p> <p>2. Automatic sprinkler system shall not be required in a townhouse constructed in accordance with the International Residential Code.</p> <p>3. The townhouse shall be separated from adjoining units in accordance with Section R302.2 of the International Residential Code.</p>					
EB97-22	<p>Add new text as follows:</p> <p><u>1011.2.1.1 Nonrequired automatic sprinkler systems.</u> The code official is authorized to permit the removal of existing automatic sprinkler system where all of the following conditions exist:</p> <p>1. The system is not required for new construction.</p>		X			Allows for removal of non-required fire safety systems.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2. Portions of the system that are exposed to the public are removed.</p> <p>3. The system was not installed as part of any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means of egress conditions, fire code deficiencies, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building.</p> <p><u>1011.2.1.1.1 Approval.</u> Plans, investigation and evaluation reports, and other data shall be submitted documenting compliance Section 1011.2.1.1 for review and approval in support of a determination authorizing the removal of the automatic sprinkler system by the code official.</p>					
EB98-22	<p>Revise as follows:</p> <p>1011.5.1 Means of egress for change to a higher-hazard category. Where a change of occupancy classification is made to a higher hazard category (lower number) as shown in Table 1011.5, the means of egress shall comply with the requirements of Chapter 10 of the International Building Code.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Stairways shall be enclosed in compliance with the applicable provisions of Section 903.1. 2. Existing stairways including handrails and guards complying with the requirements of Chapter 9 shall be permitted for continued use subject to approval of the code official. 3. Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements. 4. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2-inch-thick (12.7 mm) gypsum wallboard shall be permitted. Such walls shall either terminate at the underside of a ceiling of equivalent construction or extend to the underside of the floor or roof next above. 5. Existing corridor doorways, transoms and other corridor openings shall comply with the requirements in Sections 804.6.1, 804.6.2 and 804.6.3. 6. Existing dead-end corridors shall comply with the requirements in Section 804.7. 7. An operable window complying with Section 1011.5.6 shall be accepted as an emergency escape and rescue opening. 		X		Allows for design flexibility for occupiable roofs.	

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>8. In Group I-1 and I-2 facilities, required guards enclosing the occupiable roof areas shall be permitted to be greater than 48 inches (1219 mm) above the surface of the occupiable roof where the occupants, because of clinical needs, require restraint or containment as part of a function of a psychiatric or cognitive treatment area.</p> <p>1011.5.2 Means of egress for change of use to an equal or lower-hazard category. Where a change of occupancy classification is made to an equal or lesser-hazard category (higher number) as shown in Table 1011.5, existing elements of the means of egress shall comply with the requirements of Section 905 for the new occupancy classification. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10 of the International Building Code.</p> <p>Exception-Exceptions:</p> <p>1. Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.</p> <p>2. In Group I-1 and I-2 facilities, required guards enclosing the occupiable roof areas shall be permitted to be greater than 48 inches (1219 mm) above the surface of the occupiable roof where the occupants, because of clinical needs, require restraint or containment as part of a function of a psychiatric or cognitive treatment area.</p> <p>Revise as follows:</p> <p>804.12.2 Design. Guards required in accordance with Section 804.12.1 shall be designed and installed in accordance with the International Building Code.</p> <p>Exception: In Group I-1 and I-2 facilities, required guards enclosing the occupiable roof areas shall be permitted to be greater than 48 inches (1219 mm) above the surface of the occupiable roof where the occupants, because of clinical needs, require restraint or containment as part of a function of a psychiatric or cognitive treatment area.</p>					
EB99-22	<p>Revise as follows:</p> <p>1011.6.1 Height and area for change to a higher-hazard category. Where a change of occupancy classification is made to a higher-hazard category as shown in Table 1011.6, heights and areas of buildings and structures shall comply with the requirements of Chapter 5 of the <i>International Building Code</i> for the new occupancy classification.</p> <p>Exception Exceptions:</p>	X			Cost of not implementing fire resistance upgrades.	Allows flexibility.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<ol style="list-style-type: none"> 1. For high-rise buildings constructed in compliance with a previously issued permit, the type of construction reduction specified in Section 403.2.1 of the <i>International Building Code</i> is permitted. This shall include the reduction for columns. The high-rise building is required to be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the <i>International Building Code</i>. 2. Buildings that were constructed in compliance with a previously issued permit that have floor assemblies with a 1-1/2 hour fire resistance rating shall not be required to comply with Chapter 5 of the <i>International Building Code</i> where all of the following apply: <ol style="list-style-type: none"> 2.1. Chapter 5 of the <i>International Building Code</i> requires Type IB construction. 2.2. The building does not include Group H occupancies. 2.3. The building is protected throughout with an automatic sprinkler system in accordance Section 903.3.1.1 of the <i>International Building Code</i>. 					
EB100-22	Revise as follows: 1011.7.1 Exterior wall rating for change of occupancy classification to a higher-hazard category. Where a change of occupancy classification is made to a higher hazard category as shown in Table 1011.7, exterior walls shall have fire resistance, and exterior opening areas, and opening protectives as required by the <i>International Building Code</i> . Exception: A 2-hour fire-resistance rating shall be allowed where the building does not exceed three stories in height and is classified as one of the following groups: A-2 and A-3 with an occupant load of less than 300, B, F, M or S.		X			Clarification.
EB101-22	Revise as follows: 1011.8.2 Stairways. Where a change of occupancy classification is made to a higher-hazard category as shown in Table 1011.5, interior stairways shall be enclosed as required by the <i>International Building Code</i> . Exceptions: <ol style="list-style-type: none"> 1. In other than Group I occupancies, an enclosure shall not be required for openings serving only one adjacent floor and that are not connected with corridors or stairways serving other floors. 2. Unenclosed existing stairways need not be enclosed in a continuous vertical shaft if each story is separated from other 	X			References a known standard.	Consistency.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>stories by 1-hour fire-resistance-rated construction or approved wired glass set in steel frames and all exit corridors are <u>sprinklered in accordance with the International Building Code</u>. The openings between the corridor and the occupant <u>tenant</u> space shall have not fewer than one sprinkler head above the openings on the tenant side. The sprinkler system shall be permitted to be supplied from the domestic water-supply systems, provided that the system is of adequate pressure, capacity and sizing for the combined domestic and sprinkler requirements.</p> <p>3. Existing penetrations of stairway enclosures shall be accepted if they are protected in accordance with the International Building Code.</p>					
EB104-22	<p>Revise as follows: [BS] 1201.2 Report. A historic building undergoing alteration or change of occupancy shall be investigated and evaluated, <u>and if it is intended that the building meet the requirements of this chapter</u>, a written report shall be prepared and filed with the code official by a registered design professional where such a report is necessary in the opinion of <u>required by</u> the code official. Such <u>The</u> report shall be in accordance with Chapter 1 and shall identify <u>all unsafe conditions as defined in Section 115</u> each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a <u>description of structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be included</u> prepared. Additionally, the report shall describe <u>the components of the building that provide a level of safety substantially below that required of existing non-historic buildings.</u> each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.</p>		X			Clarification.
EB105-22	<p>Revise as follows: [BS] 1201.2 Report. A historic building undergoing alteration or change of occupancy shall be investigated and evaluated. If it is intended that the building meet the requirements of this</p>	X			Reduction in cost of minor alterations where they do no harm and	Relaxes the requirements for a report for historic

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>chapter, a written report shall be prepared and filed with the code official by a registered design professional where such a report is necessary in the opinion of the code official. Such report shall be in accordance with Chapter 1 and shall identify each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be prepared. Additionally, the report shall describe each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.</p> <p>Exception: An investigation, evaluation, and report shall not be required where the alteration is scoped by Section 602 as a Level 1 alteration and does not make the building or structure less complying with the provisions of the International Building Code.</p>				do not make any non-compliances worse.	buildings and structures that are undergoing Level 1 alterations that do not make the building less compliant with the building code for new construction.
EB106-22	<p>Revise as follows:</p> <p>1201.3 Special occupancy exceptions—museums. Where a building in Group R-3 is used for Group A, B or M purposes such as museum tours, exhibits and other public assembly activities, or for museums less than 3,000 square feet (279 m) <u>per floor and a maximum of three stories, the occupancy shall be classified as Group B where life safety conditions are approved by the code official in accordance with Section 1201.2.</u> the code official is authorized to determine that the occupancy is Group B where life safety conditions can be demonstrated in accordance with Section 1201.2. Adequate means of egress in such buildings, including, but not limited to, a means of maintaining doors in an open <u>unlocked</u> position to permit egress, a limit on building occupancy to an occupant load permitted by the means of egress capacity, a limit on occupancy of certain areas or floors, or supervision by a person knowledgeable in the emergency exiting procedures, shall be provided.</p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
EB108-22	<p>Revise as follows:</p> <p>1203.2 General. Every historic building that does not conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard as defined herein shall be provided with an approved automatic <u>sprinkler fire-extinguishing system</u> as determined appropriate by the code official. However, an automatic <u>sprinkler fire-extinguishing system</u> shall not be used to substitute for, or act as an alternative to, the required number of exits from any facility.</p> <p>1203.12 Automatic <u>sprinkler fire-extinguishing systems</u>. Every historic building that cannot be made to conform to the construction requirements specified in the International Building Code for the occupancy or use and that constitutes a distinct fire hazard shall be deemed to be in compliance if provided with an approved automatic <u>sprinkler fire-extinguishing system</u>.</p> <p>Exception: Where the code official approves an alternative life-safety system.</p>		X			Clarification.
EB110-22	<p>Revise as follows:</p> <p>1203.3 Means of egress. Existing door openings and corridor and stairway widths less than those specified elsewhere in this code may be approved, provided that, Where in the opinion of the code official, there is sufficient width and height for a person to pass through the opening or traverse the means of egress, <u>existing door openings and corridor and stairway widths are not required to meet the widths required by the International Building Code or this code.</u> Where approved by the code official, the front or main exit doors need not swing in the direction of the path of exit travel, provided that other approved means of egress having sufficient capacity to serve the total occupant load are provided.</p>		X			Clarification.
EB113-22	<p>Revise as follows:</p> <p>[BS] 1205.1 General. Historic buildings shall comply with the applicable structural provisions for the work as classified in Chapter 4 or 5.</p> <p>Exceptions:</p> <p>1. The code official shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.</p>	X			Reduces cost of repairing damaged historic buildings.	Repair of damaged historical building.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2. Repair of substantial structural damage is not required to comply with Sections 405.2.3 and 405.2.4. Substantial structural damage shall be repaired in accordance with Section 405.2.1. Regardless of the level of damage, structural repairs shall be permitted to return the building to its pre-damage condition without additional work.</p>					
EB114-22	<p>[BS] 1205.1 General. Historic buildings shall comply with the applicable structural provisions for the work as classified in Chapter 4 or 5.</p> <p>Exceptions:</p> <p>1. The code official shall be authorized to accept existing floors and roof framing and existing <u>previously approved</u> live loads and <u>roof live loads</u> and to approve operational controls that limit the live load on any floor or roof live load.</p> <p>2. Repair of substantial structural damage is not required to comply with Sections 405.2.3 and 405.2.4. Substantial structural damage shall be repaired in accordance with Section 405.2.1.</p>		X			Clarification.
G9-22	<p>Revise as follows:</p> <p>[BG] 1501.2 Storage and placement. Construction equipment and materials shall be stored and placed so as not to endanger the public, the workers or adjoining <u>adjacent</u> property for the duration of the construction project.</p> <p>[BG] 1501.4 Manner of removal. Waste materials shall be removed in a manner that prevents injury or damage to persons, adjoining <u>adjacent</u> properties and public rights-of-way.</p> <p>SECTION 1502 PROTECTION OF ADJOINING ADJACENT PROPERTY</p> <p>[BS] 1502.1 Protection required. Adjoining <u>Adjacent</u> public and private property shall be protected from damage during construction and demolition work. Protection must be provided for footings, foundations, party walls, chimneys, skylights and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities. The person making or causing an excavation to be made shall provide written notice to the owners of adjoining <u>adjacent</u> buildings advising them that the excavation is to be made and that the adjoining <u>adjacent</u> buildings should be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation.</p>		X			Consistency.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
G11-22	<p>Revise as follows:</p> <p>[BS] 1502.1 Protection required. Adjoining public and private property shall be protected from damage during construction and demolition work. Protection must be provided for footings, foundations, party walls, chimneys, skylights and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities. The person making or causing an excavation to be made shall provide written notice to the owners of adjoining <u>buildings property</u> advising them that the excavation is to be made and that the adjoining <u>buildings property</u> should be protected. Said notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation.</p> <p>[BS] 1502.2 Excavation retention systems. Where a retention system is used to provide support of an excavation for protection of adjacent <u>property or structures</u>, the system shall conform to the requirements in Section 1502.2.1 through 1502.2.3.</p> <p>[BS] 1502.2.2 Excavation retention system monitoring. The retention system design shall include requirements for monitoring of the system and adjacent <u>property or structures</u> for horizontal and vertical movement.</p>		X			Consistency.
G199-21 Part I	<p>Revise as follows:</p> <p>SECTION 1501 GENERAL</p> <p>[BG] 1501.1 Scope. The provisions of this chapter shall govern safety during construction and the protection of adjacent public and private properties. <u>Fire safety during construction shall also comply with the applicable provisions of Chapter 33 of the International Fire Code.</u></p> <p>[BG] 1501.2 Storage and placement of construction equipment and materials. Construction equipment and materials shall be stored and placed so as not to endanger the public, the workers or adjoining property for the duration of the construction project.</p> <p>[BS] 1501.2.1 1501.3 Structural and construction Roof loads. Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.</p> <p>[BG] 1501.3 1501.4 Alterations, repairs and additions Maintenance of exits, existing structural elements, fire</p>		X			Clarification.

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>protection devices and sanitary safeguards. Required exits, existing structural elements, fire protection devices and sanitary safeguards shall be maintained at all times during alterations, repairs or additions to any building or structure.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where such required elements or devices are being altered or repaired, adequate substitute provisions shall be made. Maintenance of such elements and devices is not required where the existing building is not occupied. <p>[BG] 1501.4 1501.5 Removal of waste materials Manner of removal. Waste materials shall be removed in a manner that prevents injury or damage to persons, adjoining properties and public rights-of-way. Delete without substitution:</p> <p>[BG] 1501.5 Fire safety during construction. Fire safety during construction shall comply with the applicable requirements of the International Building Code and the applicable provisions of Chapter 33 of the International Fire Code. Add new text as follows:</p> <p><u>SECTION 1502 OWNER'S RESPONSIBILITY FOR FIRE PROTECTION</u></p> <p><u>1502.1 Site Safety Plan.</u> The owner or owner's authorized agent shall be responsible for the development, implementation and maintenance of an approved, written site safety plan establishing a fire prevention program at the project site applicable throughout all phases of the construction, repair, alteration or demolition work. The plan shall be submitted and approved before a building permit is issued. Any changes to the plan shall address the requirements of this chapter and other applicable portions of the International Fire Code, the duties of staff, and staff training requirements. The plan shall be submitted for approval in accordance with the International Fire Code.</p> <p><u>1502.1.1 Components of site safety plans.</u> Site safety plans shall include the following as applicable:</p> <ol style="list-style-type: none"> Name and contact information of site safety director. Documentation of the training of the site safety director and fire watch personnel. Procedures for reporting emergencies. 					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>4. Fire department vehicle access routes.</p> <p>5. Location of fire protection equipment, including portable fire extinguishers, standpipes, fire department connections and fire hydrants.</p> <p>6. Smoking and cooking policies, designated areas to be used where approved, and signage locations in accordance with the International Fire Code.</p> <p>7. Location and safety considerations for temporary heating equipment.</p> <p>8. Hot work permit plan.</p> <p>9. Plans for control of combustible waste material.</p> <p>10. Locations and methods for storage and use of flammable and combustible liquids and other hazardous materials.</p> <p>11. Provisions for site security and, where required, for a fire watch.</p> <p>12. Changes that affect this plan.</p> <p>13. Other site-specific information required by the International Fire Code.</p> <p>1502.2 Site safety director. <u>The owner shall designate a person to be the site safety director. The site safety director shall be responsible for ensuring compliance with the site safety plan. The site safety director shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided in accordance with the International Fire Code, the site safety director shall be responsible for the guard service.</u></p> <p>1502.3 Daily fire safety inspection. <u>The site safety director shall be responsible for completion of a daily fire safety inspection at the project site. Each day, all building and outdoor areas shall be inspected to ensure compliance with the inspection list in this section. The results of each inspection shall be documented and maintained on-site until a certificate of occupancy has been issued. Documentation shall be immediately available on-site inspection and review.</u></p> <p>1. Any contractors entering the site to perform hot work each day have been instructed in the hot work safety requirements in the International Fire Code, and hot work is performed only in areas approved by the site safety director.</p>					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2. Temporary heating equipment is maintained away from combustible materials in accordance with the equipment manufacturer's instructions.</p> <p>3. Combustible debris, rubbish and waste material is removed from the building in areas where work is not being performed.</p> <p>4. Temporary wiring does not have exposed conductors.</p> <p>5. Flammable liquids and other hazardous materials are stored in locations that have been approved by the site safety director when not involved in work that is being performed.</p> <p>6. Fire apparatus access roads required by the International Fire Code are maintained clear of obstructions that reduce the width of the usable roadway to less than 20 feet (6096 mm).</p> <p>7. Fire hydrants are clearly visible from access roads and are not obstructed.</p> <p>8. The location of fire department connections to standpipe and in-service sprinkler systems are clearly identifiable from the access road and such connections are not obstructed.</p> <p>9. Standpipe systems are in service and continuous to the highest work floor, as specified in Section 1506.</p> <p>10. Portable fire extinguishers are available in locations required by Sections 1504 and for roofing operations in accordance with the International Fire Code.</p> <p>11. Where a fire watch is required, fire watch records complying with the International Fire Code are up-to-date.</p> <p><u>1502.3.1 Violations. Failure to properly conduct, document and maintain documentation required by this section shall constitute an unlawful act in accordance with Section 114.1 and shall result in the issuance of a notice of violation to the site safety director in accordance with Section 114.2. Upon the third offense, the Building Official is authorized to issue a stop work order in accordance with Section 115, and work shall not resume until satisfactory assurances of future compliance have been presented to and approved by the Building Official.</u></p> <p>Revise as follows: SECTION 1503 SANITARY [BG] 1501.7 1503.1 Facilities required. Sanitary facilities shall be provided during construction or demolition activities in accordance with the International Plumbing Code .</p> <p>Add new text as follows:</p>					

Table 7. 2024 IEBC Changes Cost Impact

CODE CHANGE #	2024 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	SECTION 1504 PROTECTION OF PEDESTRIANS. (Renumber <u>1501.6 through 1501.6.7 as 1504 subsections</u>)					
S58-22 Part I	Revise as follows: [A] 109.3.5 Lath or gypsum board panel product inspection. Lath and gypsum board <u>panel products</u> , interior and exterior, is in place but before any plastering is applied or before gypsum board-panel product joints and fasteners are taped and finished. Exception: Gypsum board-panels that is <u>are</u> not part of a fire-resistance-rated assembly or a shear assembly. [BS] 705.3 Roof recovering. Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board <u>panel products</u> , mineral fiber, glass fiber or other approved materials securely fastened in place.		X			Clarification.
S125-22 Part II	Revise as follows: [A] 109.3.10 Flood hazard documentation. Where a building is located in a flood hazard area, documentation of the elevation of the lowest floor or the elevation of dry floodproofing, if applicable, as required in the International Building Code or the International Residential Code, as applicable, shall be submitted to the code official prior to the final inspection.		X			Clarification.

APPENDIX H

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
	<i>90</i>	<i>Introduction</i>					
FR9426	90.1	Article 90 has a new scope in 90.1 that complies with the revised Style Manual 2.2.1. The Panel understands that approval of Scope statements is the responsibility of the National Electrical Code Correlating Committee.		X			New section
FR9463	90.1	Section 90.2 is revised based on adding the required scope to 90.1. CMP-1 combines the text of previous 90.1 into 90.2.		X			Revised
FR8390	90.9(B)	CMP-1 adds an exception to reflect the current use of dual units in Informative Annex C tables.		X			Revised
Chapter 1: General							
	<i>100</i>	<i>Definitions</i>					
FR7639	100	CMP-18 creates a new definition for Receptacle, Weight Supporting Ceiling (WSCR).		X			New definition
FR7845	100	The definition is added to improve the usability of the code. The words “or more” were added to recognize that more than two conductors could be involved in a short circuit. The Informational Note is not included because it does not increase usability.		X			New definition
FR7850	100	This revision deletes the definition, Setting, (Of Circuit Breakers). The language is not necessary since the wording is included in the adjustable circuit breaker definition.		X			Revised
FR7872	100	This definition for “Electrical Datum Plane” in Article 100 will be revised in the 2023 NEC to include the words “Normal High Water Level”. The information regarding determining the distance for the Electrical Datum Plane will be revised and added to section 551.3 and 555.3 to address both conditions. The added language adds clarity for the user and references the new term “Normal High Water Level” for more consistent enforcement.		X			New definition
FR7875	100	CMP-7 has created a new definition for “Normal High Water Level” as it applies to Electrical Datum Plane distances to standardize the installations and enforceability according to the NEC.		X			New definition
FR7946	100	Panelboards are commonly installed in cabinets and cutout boxes but may be installed in many types of equipment so this addition would cover other applications with the term identified equipment.		X			Revised
FR7980	100	The committee creates a definition to differentiate between a branch circuit and a motor branch circuit.		X			New definition

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
			Sub Code:				
FR8062	100	PI's were reviewed and additional were made changes to definitions made to reflect changes in NFPA 99 definitions and added information to Article 517.		X			New definition
FR8064	100	CMP-15 adds the term "Patient Care-Related Electrical Equipment" and definition to coordinate with NFPA 99.		X			New definition
FR8065	100	CMP-15 adds the term "Space" and definition to coordinate with NFPA 99.		X			New definition
FR8214	100	A new definition of "impedance grounded system" has been created. Currently, no definition exists for an impedance grounded system in the NEC. The term is used but also the system is described inconsistently with multiple variations such as high impedance grounded neutral system and impedance grounded neutral system. This definition will provide consistency as well as a reference to define elements that are a part of the system.		X			New definition
FR8216	100	A new definition for "impedance grounding conductor" has been created.		X			New definition
FR8243	100	The change is made to clarify that a ground-fault is a condition and aligns with previous changes made in the 2020 edition.		X			Revised
FR8245	100	The new definition of "likely to become energized" addresses a term used in multiple places throughout the NEC. This will aid in the understanding of what is meant by the term.		X			New definition
FR8246	100	The term more accurately describes what the separately derived system is and how the term is to be applied.		X			Revised
FR8399	100	Other building systems such as electrical raceways, plumbing pipes, and mechanical systems are presently considered accessible since they are not part of the structure or finish of the building. This revised wording clarifies the intent of the definition.		X			Revised
FR8410	100	When all of the definitions in Article 100 are consolidated because the parts are being eliminated, the definition for "disconnecting means" will be included under the definition for "switching device." Therefore, a separate definition is redundant and unnecessary.		X			Revised
FR8413	100	The definition of "Storable Swimming, Wading, or Immersion Pools; and Storable/Portable Spas and Hot Tubs" has been revised to reflect current storable products in the marketplace. This correlates with revisions being made to the definition of permanently installed swimming, wading, immersion, and therapeutic pools. The informational note was added to clarify that		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		modern storable pools may exceed 1.07 m (42 inch) wall height.						
FR8416	100	The definition of “Permanently Installed Swimming, Wading, Immersion, and Therapeutic Pools” has been revised to affirm that the electrical hazards are not related to the depth. This correlates with revisions being made to the definition of “Storable Swimming, Wading, and Immersion Pools; and Storable/Portable Spas and Hot Tubs”.		X				Revised
FR8417	100	The definition has been changed to remove the word “pool” to clarify that splash pads are not pools. However, splash pads may present similar risks as pools, and therefore in accordance with Part V of Article 680, are required to comply with some of the same requirements as pools in Part II of Article 680.		X				Revised
FR8428	100	The Definitions for conductor stranding have been relocated to Article 100 and text removed from Chapter 9 Table 8 and Annex C to align with the Style Manual.		X				New definition
FR8429	100	The Definitions for conductor stranding have been relocated to Article 100 and text removed from Chapter 9 Table 8 and Annex C to align with the Style Manual.		X				New definition
FR8449	100	This definition distinguishes servicing and maintenance activities from reconditioning.		X				New definition
FR8456	100	The tabulated items under switching devices include circuit breaker. As the parts in Article 100 are eliminated, the definition for “circuit breaker” makes the definition for “circuit breaker” as a subheading under switching devices extraneous. Therefore, the definition of circuit breaker under switching devices is deleted.		X				Revised
FR8462	100	Informational Note 3 for the definition of “Voltage, Nominal” might present confusion with respect to the definition Nominal Voltage (Battery or Cell) that had been located in 480.2 which states: “The value assigned to a cell or battery of a given voltage class for the purpose of convenient designation. The operating voltage of the cell or battery may vary above or below this value.” As such, CMP-1 deletes Informational Note 3.		X				Revised
FR8470	100	CMP-1 defines a panelboard installed in a suitable cabinet, cutout box, or enclosure suitable for a panelboard application. CMP-1 recognizes that there might be confusion that a panelboard, as defined, is not an enclosed panelboard. This new definition is added to promote clarity of use of terms in the Code.		X				New definition

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8543	100	These terms are used throughout the code necessitating the need for definitions.		X			New definition
FR8545	100	These terms are used throughout the code necessitating the need for definitions.		X			New definition
FR8546	100	These terms are used throughout the code necessitating the need for definitions.		X			New definition
FR8547	100	These terms are used throughout the code necessitating the need for definitions.		X			New definition
FR8571	100	The definition for equipotential plane is being revised to remove “accessible”. For the purposes of Article 682, the equipotential plane includes not only accessible parts but inaccessible parts such as rebar.		X			Revised
FR8622	100	These definitions are being added to correlate with the addition of cable joints and cable terminations in Article 315.		X			New definition
FR8623	100	These definitions are being added to correlate with the addition of cable joints and cable terminations in Article 315.		X			New definition
FR8630	100	These terms are used throughout the code necessitating the need for definitions.		X			New definition
FR8640	100	CMP-15 revises and adds new definitions to support new wording created by PI-824 (FR-8007) TG2-014 and PI- 842 (FR-8640).		X			Revised
FR8655	100	The current definition and informational note is revised to better align with the definition in ANSI/UL 121201.		X			Revised
FR8656	100	The referenced standard titles have been updated.		X			Revised
FR8657	100	The text has been revised to not use the term in the definition. The referenced standard titles have been updated.		X			Revised
FR8658	100	The referenced standard titles have been updated.		X			Revised
FR8660	100	New definition for type of protection - Special Protection “S”.		X			New definition
FR8662	100	New definition for cable connector for application in hazardous (classified) locations is added to Article 100. Panel Statement: Correlate with CMP-6 for Article 337 to add an informational note reverse of one above to acknowledge cable connectors in addition to fittings. Cable connectors are commonly used to terminate Type P cable on mobile land based gas and oil drilling rigs.		X			New definition
FR8664	100	Definition for “sealed” as applied to hazardous (classified) locations is added.		X			New definition
FR8666	100	Definition for “enclosed-break” is added.		X			New definition

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8668	100	Definition for “pressurized room” is added.		X			New definition
FR8683	100	PI’s were reviewed and additional changes to definitions were made to reflect changes in NFPA 99 definitions and added information to Article 517. CMP-15 adds the LS101 extract to Limited Care Facility. CMP-15 edits nurses station for clarity and conformance with the Style Manual CMP-15 has included the concept for a Health Care Microgrid, including its definition. CMP-15 revises the definitions to correlate with changes made to Part V of Article 517.		X			Revised
FR8748	100	This term is used throughout the hazardous (classified) location articles without a definition, but a long description of what it is each time the term is used. By having a defined term, the descriptive language in each section where the term is used can be eliminated.		X			New definition
FR8759	100	The term "hazardous (classified) location is use throughout the NEC without a definition. This new definition provides the necessary context for use of the term in the Code.		X			New definition
FR8766	100	The definition for Equipment Protection Level (EPL) is being added in Article 100 so that the abbreviation may be used in the articles without having to re-identify the term each time and for usability.		X			New definition
FR8774	100	In the 2020 code cycle “basin” in the definition of bathroom was changed to “sink (basin)”. To be consistent with the use of the word sink in the definitions of kitchens, “(basin)” is removed from the definition for bathroom.		X			Revised
FR8777	100	When this definition was revised in the 2020 edition of the NEC, the informational note was missed. The word "emergency" needs to be added. In addition, wording of this definition was modified to respond to the first revision in 700.24 for correlation.		X			Revised
FR8781	100	700.23 already uses this term(Normal/Emergency Power Source). As emergency control systems increase in complexity to adapt to new technologies, this term needs a clear definition. When applied to other requirements for sensing loss of normal power, it is important to have a clear nomenclature and definition of a circuit on the load side of a transfer switch that can be both a normal and an emergency circuit.		X			New definition

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8782	100	The definitions “Emergency Luminaire, Battery-Equipped” and “Unit Equipment” were added to correlate with changes in 700.12 and 700.12(I). See the first revision in 700.12.		X			New definition
FR8810	100	Composite is changed to hybrid in order to align the NEC definition with the current ICEA (Insulated Cable Engineers Association) definition, and the IEC (International Electrotechnical Commission) definition.		X			Revised
FR8978	100	A definition of generator (generator set) has been added in article 100 to define and clarify the components of a generator.		X			New definition
FR9024	100	The Definitions for conductor stranding have been relocated to Article 100 and text removed from Chapter 9 Table 8 and Annex C to align with the Style Manual.		X			New definition
FR9043	100	The voltage range for Li-ion batteries In the Informational Note is changed to 3.2-3.8 volts to reflect current battery technology. Also, “systems” was changed to “batteries” to align with the changes to the scope of this article.		X			Revised
FR9046	100	The definition of “storage battery” was changed to “battery” and the text revised to be consistent with the definition of “battery” in NFPA 855.		X			Revised
FR9051	100	A definition for a new term “Stationary Standby Battery” has been added. This additional definition for ‘stationary standby battery’ is consistent with the change in scope of this article and is consistent with revisions made to the article to limit it to systems with dc loads. The informational note was added to clarify that UPS batteries fit the definition of a stationary standby battery.		X			New definition
FR9075	100	These revisions are consistent with the scope changes in Article 480 which will allow users to distinguish between Articles 480 and 706.		X			Revised
FR9076	100	The definition of a flow battery is revised to delete the reference to a fuel cell because it suggests that they are very similar which they are not. Flow batteries and fuel cells are different technologies and subjected to different safety criteria. The definition is also revised to recognize there are flow batteries with one active electrolyte. The informational note is revised to add an additional flow battery technology.		X			Revised
FR9077	100	A new definition for Flywheel ESS has been added for the new term used in new 706.51. Defining a Flywheel ESS provides an understanding of the concept of such a system.		X			New definition

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9119	100	Revisions are made to include listing requirements for energy management systems to ensure compliance with industry safety standards.		X			New definition
FR9125	100	The term “interactive system” is replaced with “interactive mode” to better describe the functionality and various operational modes associated with systems that connect to an electric power production and distribution network.		X			Revised
FR9126	100	The term “interactive inverter” is revised to address the functionality provided by this equipment and differentiate from inverters capable of operating in other modes.		X			Revised
FR9127	100	The definition of “battery system” was deleted to clarify the differences between a traditional stationary standby battery and energy storage or uninterruptible power supply systems which include electrochemical stored energy.		X			Revised
FR9128	100	The definition of “meter-mounted transfer switch” is being added to clarify this type of equipment and the associated use within the wiring system. The term is used in multiple articles and providing a common definition is warranted. This definition correlates with the definition found in UL 1008M.		X			New definition
FR9129	100	The definition of uninterruptible power supply was revised to clarify the system operation and duration limitations. An acronym was added to make use of the term more concise elsewhere in the code. The informational note was removed as the concepts are conveyed in the revised definition.		X			Revised
FR9184	100	The first revision revises the load to indicate it is the largest air-conditioning or motor load as covered in 440.33. Using nameplate voltages that would be encountered shows how to calculate these loads where their voltage differs from the nominal voltage of the system. The ratings of the equipment are correct as currently written and is noted they are allowed to operate on the 120-V and 240-V nominal voltage systems.		X			Revised
FR9185	100	Based on the Order of Operations in mathematics and depending on the scientific calculator used, the mathematical expression can yield different results as currently written.		X			Revised

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Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9186	100	Based on the Order of Operations in mathematics and depending on the scientific calculator used, the mathematical expression can yield different results as currently written. This revision ensures that the calculation is performed correctly by moving the parenthesis. The panel notes that the multiplication symbol needs to be consistently expressed throughout the example.		X			Revised
FR9187	100	The current 2020 NEC text resulting from the action on TIA 20-6 is amended by changing “3-wire, 120/240 V” to “2-wire, 120 V” under “receptacle load”.		X			Revised
FR9227	100	Definition for “nonsparking” is added.		X			New definition
FR9228	100	The referenced standard title has been updated.		X			Revised
FR9284	100	The proposed language is necessary so that code sections, including, but not limited to 620.23(A) and 620.24(A), be enforceable.		X			Revised
FR9345	100	New interconnection standards require that inverters have the ability to control reactive power (kVA). Because of this, some inverters are rated in kVA and do not have a kW rating. This change addresses these devices. The defined term was added to the title per NEC Style Manual Section 2.2.2.3.1 to facilitate digital searches.		X			Revised
FR9346	100	This definition is deleted. It is not used in any advanced energy article. A similar term exists in Chapter 8 and so this definition could cause confusion.		X			Revised
FR9347	100	This revision replaces “system” with “mode” since the term “interactive” is more often used without “system” and is typically applied to a specific piece of equipment, not a system as a whole. With related changes to “microgrid system” and “stand-alone system” the term interactive mode will apply to a power source, such as an interactive inverter, not a system.		X			Revised
FR9349	100	This change better aligns with revised definitions of stand-alone and microgrid systems. The informational note was deleted as the terms isolated and interconnected microgrids are not used in the Code.		X			Revised
FR9350	100	This revision clarifies that a stand-alone system is one that is not connected to a utility. The definition is modified to complement the definition of a microgrid system.		X			Revised
FR9352	100	This new definition completes the set of inverter type definitions: stand-alone, interactive and multi-mode. The defined term was added to the title per NEC Style Manual Section 2.2.2.3.1 to facilitate digital searches.		X			New definition

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Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9354	100	This change generalizes the defined term so that it can be used in other contexts such as ESS. The word “output” was deleted from the title to match the use of the term throughout the NEC.		X			Revised
FR9359	100	The addition to this definition clarifies that the MID allows a microgrid system to operate in island mode.		X			Revised
FR9360	100	The revision of this definition clarifies that a microgrid, as define in the Code, is a system that can connect and disconnect from a utility service.		X			Revised
FR9362	100	The revision of this definition clarifies a power source output circuit is a circuit between a source and the connection point to other systems such as a service, distribution equipment or feeders.		X			Revised
FR9363	100	The term “primary source” is used in Article 705 but is not previously defined.		X			New definition
FR9367	100	The acronym GFDI is used in 690.41(B) but is not defined. This new definition distinguishes that a GFDI differs from a GFCI, and is a device specifically applicable to PV systems.		X			New definition
FR9379	100	Revised Informational Note to better integrate WPT into Article 625. The definition is not being revised as it is clear as written.		X			Revised
FR9386	100	The definition for "Load Management" was added to provide clarity for the user.		X			New definition
FR9387	100	The definition for "Load Management System" was added to provide clarity for the user.		X			New definition
FR9400	100	Revised the definition to clarify that WPT is a contactless method of transferring electrical energy.		X			Revised
FR9432	100	This new definition unifies the description of all circuits connected directly to one or more PV modules.		X			Revised
FR9472	100	The added text establishes that EVSE is plug-in only, as to differentiate it from WPTE. The committee Revised the Informational Note to better integrate WPT into Article 625.		X			Revised
FR9493	100	Revised definition for use through the entire Code and to coordinate with identical term in 625.2.		X			Revised
FR9505	100	This definition aligns the NEC with important microgrid systems equipment functionality and upcoming microgrid standards.		X			New definition
FR9518	100	A new definition for safety circuit was added to the definitions for article 670 to align with new term in NFPA79 2021 addition.		X			New definition

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Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9555	100	The current definition does not refer to other uses like fire alarm cables, communications cables, or fiber optic cables which all are permitted in their respective articles to use the (-CI) suffix.		X			Revised
FR9556	100	Class 1 circuits as covered by the new Class 1 article are limited to 30 volts and 1000 volt-amperes.		X			Revised
FR9557	100	Remote-control circuits have been a part of Article 725 for many years and can be power-limited Class 2 or Class 3 circuits or Class 1 circuits. Currently, Class 1 remote-control circuits can be power-limited or non-power limited and up to 600 volts.		X			Revised
FR9558	100	Remote-control circuits have been a part of Article 725 for many years and can be power-limited Class 2 or Class 3 circuits or Class 1 circuits. Currently, Class 1 remote-control circuits can be power-limited or non-power limited and up to 600 volts.		X			New definition
FR9559	100	Signaling circuits have been a part of Article 725 for many years and can be power-limited Class 2 or Class 3 circuits or Class 1 circuits. Currently, Class 1 signaling circuits can be power-limited or non-power limited and up to 600 volts.		X			Revised
FR9560	100	Signaling circuits have been a part of Article 725 for many years and can be power-limited Class 2 or Class 3 circuits or Class 1 circuits. Currently, Class 1 signaling circuits can be power-limited or non-power limited and up to 600 volts.		X			New definition
FR9572	100	For completeness, the definition of "point of entrance" was expanded to include cables entering through a roof.		X			Revised
FR9574	100	The definition of "cable sheath" has been revised to coordinate with the same term used in Article 800 and other articles of the code.		X			Revised
FR9576	100	A new definition for occupiable space is added for consistent application of the NEC.		X			New definition
FR9596	100	The definition of communications circuit has been modified to include all communications services, not just those from a communications utility or service provider.		X			Revised
FR9600	100	The definition of a Premises Communications Circuit has been shortened by removing "such as a telephone, a fax machine, or an answering machine" because the deleted text does not add any value to the definition.		X			Revised
FR9601	100	A reference to general Article 800 was omitted in the 2020 edition. This FR corrects that omission.		X			New definition
FR9605	100	A new definition of Emergency Power Supply is also added to correlate with NFPA 110. See also FR-9610 and FR-9608.		X			New definition

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9607	100	700.16(B) uses the term “control devices in the emergency lighting system.” There has been some confusion in the industry as to what qualifies as an emergency lighting control device as the term is used, but not defined in the Code.		X			New definition
FR9608	100	The definition of an Emergency Power Supply System (EPSS) is added in Article 700 for alignment with NFPA 110. This definition is useful to describe emergency systems consisting of multiple sources to collectively supply loads when the normal supply is interrupted. Also see FR-9605 and FR-9610. This revision was developed by NFPA staff for editorial purposes, in accordance with 4.3.9.3.2 and 4.3.9.3.3 of the Regulations Governing the Development of NFPA Standards (www.nfpa.org/regs).		X			New definition
FR9616	100	A new definition for Spin Down has been added for the new term used in new 706.51. Defining Spin Down describes the performance of the FESS during a shutdown condition. Also see FR-9077.		X			New definition
FR9619	100	The term Stored-Energy Power Supply System (SEPSS) is being introduced to address the unique requirements for these sources to serve within an EPSS. Also see FR-9608 and FR-9605. This revision was developed by NFPA staff for editorial purposes, in accordance with 4.3.9.3.2 and 4.3.9.3.3 of the Regulations Governing the Development of NFPA Standards (www.nfpa.org/regs).		X			New definition
FR9622	100	The definitions “Emergency Luminaire, Battery-Equipped” and “Unit Equipment” were added to correlate with changes in 700.12 and 700.12(I). See the first revision in 700.12.		X			New definition
FR9629	100	With the relocation of all definitions to Article 100, separate definitions for “cell, sealed (sealed cell)” and “battery, sealed (sealed batter)” are created in order for all definitions with the term “battery” to be grouped alphabetically.		X			New definition
SR7505	100	Based on the recollection of multiple Committee Members, it was not the intent to add the last part of the sentence, the portion stating “or where placed within a floor-mounted commercial appliance outlet center, from the top”.		X			Revised
SR7508	100	The first use of the term suitable was removed as being redundant. Not all enclosures are suitable for panelboard application. Responsibility for this definition has been reassigned to CMP 9 by the Correlating Committee.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7509	100	The last sentence is essentially an explanation of how the equipment can be accessed so it is changed to an informational note. The term “generally” is changed to “can be,” and “or side” is added since there are occasions where rear or side access is also required. Rear or side access is referenced in 408.18(C).		X			Revised
SR7548	100	The customary usage of the term, “dead-front”, in the Code is as a descriptor, including its single occurrence in Article 551 [551.45(C)].		X			Revised
SR7571	100	The article reference is deleted, as the intent is that the definition applies wherever the term under the purview of CMP 14 appears in the NEC.		X			Revised
SR7573	100	The article number assigned in the First Draft was removed from the definition because the definition under the purview of CMP 14 is intended to apply wherever this term is used in the NEC®. A new informational note is added to reference UL 121201.		X			Revised
SR7575	100	The modification to the definition more closely aligns with the definition of ASME A17.1/CSA B44.		X			Revised
SR7576	100	A new Informational Note No. 3 has been added and incorporated a reference to ANSI/ISA RP 12.06.01, Recommended practice for wiring methods for hazardous (classified) locations instrumentation – Part 1: Intrinsic Safety for installation information.		X			Revised
SR7578	100	The deletion of the definition removes redundancy.		X			Revised
SR7579	100	The informational note was added to Controller, Motion to clarify that motor control function may be integral to the Motion Controller.		X			Revised
SR7581	100	The second revision adds a new Informational Note No. 2 to refer to ANSI/UL 121201 for additional information for Associated Nonincendive Field Wiring Apparatus. The reference to Article 500 has been deleted in order for the term to apply throughout the Code. Revising the definition title introduces a term that is not used in the Code.		X			Revised
SR7582	100	The term “industrial establishment” as used in the Code is well understood and does not need to be defined. The definition includes a requirement. The use of the term “industrial establishment” generally also includes conditions of maintenance and supervision ensure that only qualified persons service the installation.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7586	100	The term "as applied to" is being removed from all definitions listed within this PC which have an article reference as directed from the CC. See SR-7588 for changes to "Electronically Protected." See SR-7587 for changes to "Branch Circuit, Motor (Motor Branch Circuit)." Response		X			Revised
SR7602	100	The informational note in the First Draft Report has been revised into separate notes. An additional informational note is added to refer to ANSI/UL 121201 for additional information on the use of cable connectors in hazardous (classified) locations.		X			Revised
SR7606	100	The definition is revised to remove the dates to referenced product standards. The revised definition aligns with the work of the Task Group on Combustible Dusts as directed by the Standards Council. Updates to the extract from NFPA 499 were added.		X			Revised
SR7608	100	The revision adds a new Informational Note to refer to ANSI/UL 913, ANSI/UL 60079-11 and ANSI/UL 121201 for additional information.		X			Revised
SR7612	100	The revision adds "as applied to hazardous (classified) locations" to differentiate this term from the more generic (existing) CMP 6 definition. Additional revisions are made for clarity.		X			Revised
SR7613	100	The revision adds a new Informational Note to refer to ANSI/UL 913 and ANSI/UL 60079-11 for additional information.		X			Revised
SR7614	100	The article reference is deleted, as the intent is that the definition applies wherever the term under the purview of CMP 14 appears in the NEC.		X			Revised
SR7615	100	The article reference is deleted, as the intent is that the definition applies wherever the term under the purview of CMP 14 appears in the NEC.		X			Revised
SR7622	100	Add a new Informational Note to refer to UL 60079-0 for additional information.		X			Revised
SR7629	100	The proposal to creates Informational Note 1 and adds two new Informational Notes to refer to ANSI/UL 913, ANSI/UL 60079-11, ANSI/UL 60079-25, and ANSI/ISA RP 12.06.01. The article reference is deleted, as the intent is that the definition applies wherever the term appears in the NEC.		X			Revised
SR7632	100	The defined term is revised to facilitate grouping of definitions related to repair garages. The defined term is retained in parentheses. The article number is removed as the intent is that the definition applies wherever the term appears in the NEC Response		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7639	100	The revision adds a new Informational Note to refer to UL 121201 for additional information Response		X			Revised
SR7640	100	The dates of the referenced product standard has been removed as dates are not required per the updated Style Manual. The article number assigned in the First Draft was removed from the definition because the definition is intended to apply wherever this term is used in the NEC®.		X			Revised
SR7650	100	Add a new Informational Note to refer to UL 122701 for additional information.		X			Revised
SR7655	100	The definition for occupiable space that is used only one time in the Code is deleted.		X			Revised
SR7661	100	Informational Notes 1 and 2 have been deleted because this information is more appropriately located in the requirements covering this protection method. A new Informational Note is added to refer to UL 60079-33 for additional information.		X			Revised
SR7674	100	The article number assigned in the First Draft was removed from the definition because the definition is intended to apply wherever this term is used in the NEC®. Updates to extracts were made where applicable.		X			Revised
SR7700	100	The definition is created by CMP 14 to align with requirements for installations specifically in hazardous (classified) locations.		X			New definition
SR7701	100	The references to other articles were removed from the definition as all definitions reside in Article 100. In addition, the dates were removed from the informational note references to align with 90.5.		X			Revised
SR7736	100	Definition revised for broader use throughout the NEC. Consequently, the revised definition is no longer purview of (CMP-12).		X			Revised
SR7739	100	The definition of cord connector as applied to electrified truck parking spaces is deleted due to redundancy.		X			Revised
SR7740	100	The definition of parking space disconnecting means is deleted due to redundancy.		X			Revised
SR7743	100	Industry standards such as NFPA 70B may be used a guide for servicing of equipment and therefore the definition is amended to include applicable industry standards in addition to manufacturer’s instructions.		X			Revised
SR7744	100	The definition of electric vehicle supply equipment is revised to remove mandatory language.		X			Revised
SR7745	100	The definition for “reconditioned” has been assigned to CMP-1.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7748	100	Definition deleted due to redundancy with the definition of Energy Management System and the requirements of Article 750.		X			Revised
SR7749	100	The definition of power-supply cord as applied to EVSE was deleted due to redundancy.		X			Revised
SR7753	100	The definition of wireless power transfer equipment was revised to remove mandatory language.		X			Revised
SR7760	100	The definitions have been deleted due to redundancy and the abandoned cable TG will be creating one definition.		X			Revised
SR7795	100	This definition is modified to align with the work of the Task Group on Combustible Dusts as directed by the Standards Council and to comply with the NEC Style Manual as directed by the Correlating Committee Note No_363. Dates to referenced product standards have been removed as dates are not required per the updated Style Manual. Extracts were made as applicable based on the NFPA 499 TIA.		X			New definition
SR7796	100	The definition of ignitable fibers/flyings is needed to coordinate with changes to Articles 503 and 506 in First Draft.		X			New definition
SR7848	100	The term "oil cutout" is not used in the NEC and is being deleted from the definition title, leaving only the term "Oil-Filled Cutout." The comment inserted an article specification and panel responsibility. Because of the structure of this part of Article 100 and the modifications being made to the title line of the parent topic, this information is not being included in the definition.		X			Revised
SR7849	100	The definition is being editorially modified by opening with the phrase "switching device" in order to be consistent with other definitions in this group. Because of the modification of the title line of the parent category (see SR-7851), the inclusion of panel responsibility is not required here.		X			Revised
SR7850	100	This definition is being rewritten to eliminate the circularity of having key elements of the defined term also used within the definition. The wording is also being adjusted to maintain consistency regarding the terminology "switching device".		X			Revised
SR7851	100	CMP 9 is changing the title text to clarify that both the parent language and all subsidiary definitions apply exclusively to equipment with ratings over 1000 V ac, 1500 V dc.		X			Revised
SR7903	100	SCADA system examples in the second sentence of the definition were moved into an informational note to improve clarity.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7906	100	The definition for counter (countertop) is added to help the user of the Code understand the difference between a countertop and a work surface where these two terms are used.		X			New definition
SR7907	100	The definition for work surface is added to help the user of the Code understand the difference between a countertop and a work surface where these two terms are used. The main difference between these two types of surfaces is primarily associated with the amount of spillage they may be exposed to. This new definition and informational note directs the user of the Code to the standards that aid in the proper application of receptacles in these locations.		X			New definition
SR7953	100	The definition of the point of entrance of an optical fiber cable is redundant; it is included in the definition of point of entrance. Therefore, the second draft text deletes the definition of the point of entrance of an optical fiber cable.		X			Revised
SR7955	100	The current definition is too narrow since it only includes utilities and omits other service providers. This revision broadens the definition to include all service providers.		X			Revised
SR7960	100	The informational note is not needed. The other definitions of exposed are next to this definition. Therefore, the second draft text deletes the Informational Note.		X			Revised
SR7962	100	The revised text allows the definition of cable sheath to be used for both optical fiber cables and metallic conductor cables. Therefore the second draft text deletes the definition of Cable Sheath (as applied to metallic conductor cables) and Cable Sheath, Optical Fiber.		X			Revised
SR7964	100	This definition of cable was moved from Article 805 where it is clear that the definition is the definition of a communications cable. Additional descriptors are needed to distinguish it from optical fiber cable.		X			Revised
SR7970	100	The revised definition of abandoned cable is intended to be the only definition of abandoned cable in the Code and is a definition that can be used to replace other es. Correlating actions by other panels are expected to remove the other definitions.		X			Revised
SR8013	100	Bonding was added to be more descriptive of the term. The acronym is removed as it is not used.		X			Revised
SR8029	100	The panel replaced the phrase "under ground-fault conditions" with the phrase "during ground-fault events" to add clarity.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8033	100	The panel re-ordered the term to locate it to follow the term “energized” and edited the definition for clarity.		X			Revised
SR8068	100	The definition of "Load Management" has been revised for clarity and correlation with Article 750. Load management is a function of a listed energy management system.		X			Revised
SR8079	100	This definition is being removed with the deletion of Article 712. A definition for “functionally grounded” remains in Article 100.		X			Revised
SR8081	100	This definition is being deleted as the term is no longer used in the requirements of the document with the deletion of Article 712.		X			Revised
SR8082	100	This definition is being deleted as the term is no longer used in the requirements of the document with the deletion of Article 712.		X			Revised
SR8083	100	Definitions Task Group 7, as directed by the Correlating Committee, reviewed the multiple definitions of "Nominal voltage” that were presented in the First Draft Report. Deleting this definition assigned to CMP-13 (Article 712), while retaining the global definition assigned to CMP-1 resolves the multiple definitions issue with no alteration of the defined term or of its applicability or usage in the document.		X			Revised
SR8084	100	These definitions are being deleted as the terms are no longer used in the requirements of the document with the deletion of Article 712.		X			Revised
SR8118	100	This second revision makes changes to align the definition with the NEC Style Manual. Informational note #2 was added to identify the dimensional specifications for weight-supporting attachment fitting configurations.		X			Revised
SR8119	100	The changes to the definition provide simplification and clarity.		X			Revised
SR8148	100	The Informational Note within the definition of a “Raceway” was deleted since all raceway definitions have been relocated to Article 100.		X			Revised
SR8161	100	“Type” has been removed from the new definitions found in Article 100 for conduit and tubings. This editorial deletion of “Type” within the definition of Liquidtight Flexible Nonmetallic Conduit (LFNC) correlates with the other definitions and clarifies the acronym for usability.		X			Revised
SR8201	100	Term “passenger transportation facilities” was inserted to 406.4(G) therefore the panel added it’s definition to 100.		X			New definition

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Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8220	100	To comply with NEC Style Manual Section 2.2.2.3 and 2.2.2.3.1 for base terms and searchable terms this definition title is updated to Module System, AC. (AC Module System) to Module System, AC. (AC Module System) Response		X			Revised
SR8221	100	The use of the word "Type" helps differentiate the specific cable constructions referred to in the definition versus a more general use of terminology such as "service entrance cables" or "nonmetallic-sheathed cables" that might refer to a group of cable types.		X			Revised
SR8224	100	"Type FCC" removed from the title and relocated into the definition body for ease of searchability by the code user. Definition body reworded for clarity.		X			Revised
SR8226	100	"Type FCC" removed from the title and relocated into the definition body for ease of searchability by the code user. Definition body reworded for clarity.		X			Revised
SR8228	100	"Type FCC" removed from the title and relocated into the definition body for ease of searchability by the code user. Definition body reworded for clarity.		X			Revised
SR8229	100	"Type FCC" removed from the title and relocated into the definition body for ease of searchability by the code user.		X			Revised
SR8230	100	"Type FCC" removed from the title and relocated into the definition body for ease of searchability by the code user. Definition body reworded for clarity.		X			Revised
SR8232	100	"Type FCC" removed from the title and relocated into the definition body for ease of searchability by the code user. Definition body reworded for clarity.		X			Revised
SR8234	100	Removed "in a way that is to be chemically, mechanically, and electrically stable" as definitions cannot contain requirements. "Type MV" removed from the title and relocated into the definition body for ease of searchability by the code user. The use of "Type MV" clarifies the product application. Definition body reworded for clarity.		X			Revised
SR8235	100	The definition is updated to ensure consistency with and differentiation from groundfault circuit interrupter terminology and with the UL 1741 product standard. UL standard 62109 is added to the informational note.		X			Revised
SR8239	100	Removed "in a way that is to be chemically, mechanically, and electrically stable" as definitions cannot contain requirements. "Type MV" removed from the title and relocated into the definition body for ease of searchability by the code user. The use of "Type MV" clarifies the product application. Definition body reworded for clarity.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8242	100	Removed "that provides mechanical protection" as definitions cannot contain requirements. Removed NFPA 79 reference as the revised definition no longer matches the definition in NFPA 79.		X			Revised
SR8243	100	A reference to microgrids is added since this mode of operation is stated in Article 705 as one of the modes that microgrids are permitted to operate within. An informational note is added to clarify that an interactive mode may be part of either interactive equipment, or of an interactive system Response		X			Revised
SR8245	100	The revision clarifies that it is the operating mode delivering energy to the loads, rather than the power sources. Additionally, microgrids are added since this mode of operation is stated in Article 705 as one of the modes that microgrids are permitted to operate within.		X			Revised
SR8247	100	To comply with NEC Style Guide Section 2.2.2.2 the term has "maximum voltage" has been removed from the definition and replaced with synonymous text.		X			Revised
SR8250	100	This revised definition more adequately applies to installations under the purview of both CMP 6 and CMP 12 and is intended to replace the two existing definitions.		X			Revised
SR8251	100	Removed "that provides mechanical protection" as definitions cannot contain requirements. Voltage range modified to "2001 to 25,000 volts" to match the voltage range of medium voltage products covered in Article 315. Definition body reworded for clarity.		X			Revised
SR8252	100	The definition has been edited to clarify that the MID is a switching device and does not control whether power sources operate in island mode. The informational note has been deleted as the standards referenced were duplicated in the term microgrid informational note and no other clarification is necessary.		X			Revised
SR8254	100	Modified title with "Stranding, Compact" as requested by the Correlating Committee and added "(Compact Stranding)" for ease of searchability by the code user. Replaced "where" with "in which" as requested by the Correlating Committee. Definition body reworded for clarity.		X			Revised
SR8255	100	Modified title with "Stranding, Compressed" as requested by the Correlating Committee and added "(Compressed Stranding)" for ease of searchability by the code user. Replaced "where" with "in which" as requested by the Correlating Committee. Definition body reworded for clarity.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8264	100	Clarifications more accurately describe that this term defines conductors.		X			Revised
SR8321	100	Change language in definition from “that has been evaluated” to “adequate for”. to avoid having requirements in definitions and informational notes.		X			Revised
SR8329	100	The definition of “Appliance” is being revised to add that it can be fastened in place, stationary, or portable, which also aligns with the proposed action to delete the definitions for “Appliances, Fixed” and “Appliance, Portable”.		X			Revised
SR8339	100	The definition of Ground-Fault Circuit Interrupter, Special Purpose (SPGFCI) is being added to Article 100 to support changes in Article 680. The phrase “current to ground” in the definition proposed by the public comment is changed to “ground-fault current” for consistency.		X			New definition
SR8340	100	The title for Type P cable was changed to Type IM in correlation with the changes made in Article 337.		X			Revised
SR8342	100	The text “swimming pools, fountains, and similar installations” was moved to parenthetical text for clarity. The term “adequate ventilation” is intentionally part of the definition, and Informational Note 2 provides additional guidance regarding adequate ventilation. Providing complete details of the specific ventilation requirements for all installations may result in requirements being part of the definition.		X			Revised
SR8345	100	The title is being revised for improved usability. The phrase “for people with disabilities” was relocated to clarify that it applies to “accessibility”, not to the pool or spa.		X			Revised
SR8360	100	The term “or power supply” is being added at end of the definition to better describe newer technologies and to align with existing requirements in Article 680.		X			Revised
SR8371	100	The parenthetical is added to help distinguish the term, which is used in Article 682, from the one used for agricultural buildings in Article 555.		X			Revised
SR8442	100	The term branch-circuit is not removed in the title to correlate with product standards. The second sentence is removed because it contained a requirement. CMP-10 is requesting that the correlating committee review the use of the term “Branch-Circuit Overcurrent Protective Device” and the use of the term “overcurrent protection device” and “supplemental overcurrent device”. See SR-8440 relocating the requirement to 240.16.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8449	100	The definitions of Service-entrance Conductor, Overhead and Service-conductor, Underground are combined and simplified for clarity and usability.		X			Revised
SR8456	100	The definition was revised for clarity and to reflect the use of this device in general installations. (See Correlating Committee Global PC 1828).		X			Revised
SR8487	100	All definition are being moved to Article 100 to comply with the NEC Style Manual. This definition will be general and would not reside under the purview of CMP3.		X			Revised
SR8502	100	The definition is moved to Article 100 in accordance with action recommended by the NEC Correlating Committee. The reference to Article 555 is deleted because the definition is also found elsewhere in the Code. The phrase “as defined in Article 100” is deleted as it is now a redundant statement.		X			Revised
SR8504	100	The definition is deleted, in accordance with action recommended by the NEC Correlating Committee, because the term is commonly understood and doesn’t add clarity or usability to the NEC.		X			Revised
SR8507	100	The definition is deleted because the existing definition in Article 100 is sufficiently generic to cover all uses of the term throughout the Code, including within Article 551.		X			Revised
SR8513	100	The definition is deleted because the existing definition in Article 100 is sufficiently generic to cover all uses of the term throughout the Code, including within Article 551.		X			Revised
SR8514	100	The addition of “vertical” adds clarity to how measurements are to be taken when installing electrical equipment around bodies of water. The term “normal high-water level” has been editorially corrected to match the format used by the USGS and other agencies.		X			Revised
SR8516	100	CMP-7 agrees that only one definition should exist. The second duplicate definition is not necessary. See PC 473 for revised definition.		X			Revised
SR8517	100	The definition of “Feeder Assembly” is a defined term used in Article 550, which is very similar to the term “Power-Supply Assembly” as used in Articles 551 and 552.		X			Revised
SR8518	100	In accordance with action recommended by the NEC Correlating Committee, the definition is deleted because the generic Article 100 definition of “Feeder” adequately covers the installations referred to in Article 551.		X			Revised
SR8530	100	In accordance with action recommended by the NEC Correlating Committee, this extracted definition is updated to reflect recent revisions in the source material. Essential information that was not present in the source material is moved to an informational note.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8532	100	Revised the text for clarity. The definition initially implied that homes needed to be occupied to be considered a “mobile home park”. The corrected text clarifies that a defined mobile home park doesn’t mandate that the homes be occupied.		X			Revised
SR8534	100	This deletion was missed in the re-write of article 530 and transfer of definitions to article 100. This definition is no longer used in Article 530.		X			Revised
SR8535	100	This deletion was missed in the re-write of Article 530 and transfer of definitions to Article 100. This definition is no longer used in Article 530 Response		X			Revised
SR8536	100	This deletion was missed in the re-write of Article 530 and transfer of definitions to Article 100. This definition is no longer used in Article 530 Response		X			Revised
SR8538	100	This deletion was missed in the re-write of Article 530 and transfer of definitions to Article 100. This definition is no longer used in Article 530 Response		X			Revised
SR8539	100	This deletion was missed in the re-write of Article 530 and transfer of definitions to Article 100. This definition is no longer used in Article 530 Response		X			Revised
SR8542	100	The definition was revised by adding a reference to “studios” so a single definition can be used with both Article 520 and 530.		X			Revised
SR8543	100	The definition is being added to Article 100 as it was intended during the First Draft rewrite of Article 530 and relocation of the definitions to Article 100 but was overlooked.		X			New definition
SR8544	100	In accordance with action recommended by the NEC Correlating Committee, the definition is expanded to address both Article 555 and Article 682 installations and add clarity for enforcement and installer usability.		X			Revised
SR8545	100	The definition is deleted because the definition for “Feeder Assembly” has been expanded in another comment to also encompass the intent of the similar term “PowerSupply Assembly”, making this definition redundant. See other comments which act to replace “Power-Supply Assembly” with “Feeder Assembly” where it is used in Articles 551 and 552. Having a single definition will increase clarity and reduce confusion.		X			Revised
SR8546	100	The title of the definition was revised for searchability and to provide for grouping under the general term “projector.” Response		X			Revised
SR8548	100	The title of the definition was revised for searchability and to provide for grouping under the general term “projector.” Response		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8549	100	Change coordinates the consolidation of the definitions in Article 100. Corrects the searchable term per MOS 2.2.2.3.1. and corrects the term to comply with 2.2.2.3 Response		X			Revised
SR8550	100	The revised language clarifies that the site supply equipment does not disconnect power to the site, since that is done by overcurrent devices or disconnecting means at the origination of the feeder or branch circuit. The site disconnecting means acts only to disconnect supplied recreational vehicles. Editorial changes were made for clarity as "power outlet" is a defined term.		X			Revised
SR8552	100	Corrects the base term to be Microgrid "Systems" Response		X			Revised
SR8556	100	The definition for "Recreational Vehicle" is an extracted term from NFPA 1192. The reference number was updated to reflect recent changes made in NFPA 1192. The informational note was added to address the different types of Recreational Vehicles that are referenced in the Annex and Annex Table in NFPA 1192 that defines the types of motor homes that are now covered by the similar terms added in parentheses to the title.		X			Revised
SR8557	100	The term and associated definition "Exposed Conductive Surfaces" in Article 517 is an extract from NFPA 99, Health Care Facilities, and essential for correlation between the two Codes.		X			Revised
SR8558	100	This definition is deleted as the generic definition for "Appliance" found in Article 100 is sufficient to cover all uses of the term throughout the code, including within Article 550.		X			Revised
SR8559	100	This definition is deleted as the generic definition for "Appliance" found in Article 100 is sufficient to cover all uses of the term throughout the code, including within Article 550.		X			Revised
SR8569	100	In accordance with the recommended action from the NEC Correlating Committee, the definition was simplified to help make it usable in various applications throughout the NEC.		X			Revised
SR8572	100	The phrase "pole-mounted" is added to clarify that the site-isolating device definition only applies to pole-top disconnects.		X			Revised
SR8573	100	The language was revised to add an informational note to address the similar term for "Manufactured Home" that was located in the definition previously and adds an		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		exclusion for “Park Trailers” consistent with revisions made to the definition for “Manufactured Home”.						
SR8575	100	The definition for Camping Trailer is now encompassed by the expanded definition for Recreational Vehicle, and therefore this redundant definition can be deleted.		X				Revised
SR8577	100	In accordance with the action recommended by the NEC Correlating Committee, the phrase “(as applies to Recreational Vehicles)” was removed as the applicable article follows the definition, making the parenthetical statement redundant.		X				Revised
SR8578	100	The definition for Motor Home is now encompassed by the expanded definition for Recreational Vehicle, and therefore this redundant definition can be deleted.		X				Revised
SR8579	100	The definition for Travel Trailer is now encompassed by the expanded definition for Recreational Vehicle, and therefore this redundant definition can be deleted.		X				Revised
SR8580	100	The definition for Truck Camper is now encompassed by the expanded definition for Recreational Vehicle, and therefore this redundant definition can be deleted.		X				Revised
SR8582	100	The reference to the source for this extracted definition has been updated. A new informational note has been added pointing the users of the code to the definition of Slip and the term was removed from the definition as the industry uses “Berth” and “Slip” terms separately.		X				Revised
SR8583	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8584	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8585	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8586	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8587	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8588	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8589	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8590	100	The reference to the source for this extracted definition has been updated.		X				Revised
SR8591	100	The reference to the source for this extracted definition has been updated.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8599	100	The reference to the source for this extracted definition has been updated. A new informational note has been added pointing the users of the code to the definition of Berth and the term was removed from the definition as the industry uses “Berth” and “Slip” terms separately.		X			Revised
SR8609	100	This change is being submitted from the CMP-15 Definitions Task Group. This deletion was missed in the rewrite of Article 530 and transfer of definitions to Article 100. This definition is no longer used in Article 530.		X			Revised
SR8610	100	This change is being submitted from the CMP-15 Definitions Task Group. This definition is redundant and addressed under the base term of Hazard Current.		X			Revised
SR8612	100	This change is being submitted from the CMP-15 Definitions Task Group. The definition is being added to Article 100 as it was intended during the First Draft rewrite of Article 530 and relocation of the definitions to Article 100 but was overlooked.		X			New definition
SR8626	100	The Class 4 Circuit definition has been harmonized with the Class 2 Circuit definition.		X			Revised
SR8627	100	The definition is being added to Article 100 as it was intended during the First Draft rewrite of Article 530 and relocation of the definitions to Article 100 but was overlooked Response		X			New definition
SR8629	100	The definition is being added to Article 100 as it was intended during the First Draft rewrite of Article 530 and relocation of the definitions to Article 100 but was overlooked.		X			New definition
SR8632	100	The definition is being added to Article 100 as it was intended during the First Draft rewrite of Article 530 and relocation of the definitions to Article 100 but was overlooked Response		X			New definition
SR8634	100	The definition is being added to Article 100 as it was added during the First Draft rewrite of Article 530 and relocation of the definitions to Article 100 but was overlooked.		X			New definition
SR8637	100	The definitions are being added to Article 100 as it was intended during the First Draft rewrite of Article 530 and relocation of the definitions to Article 100 but was overlooked.		X			New definition
SR8654	100	The definition of remote-control circuit, branch circuit was deleted as it is not needed.		X			Revised
SR8655	100	The definition of signaling circuit, branch circuit was deleted as it is not needed.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8657	100	Starting the definition with the word “cable” will move the definition adjacent to all other cable definitions and complying with section 2.2.2.3.1.		X			Revised
SR8660	100	Class 4 Tray Cable is not a term used in the NEC and therefore must be removed as a definition.		X			Revised
SR8665	100	Corrects the searchable term per MOS 2.2.2.3.1 and corrects the term to comply with 2.2.2.3 as a grouped term under the listing of "Patient Care Space Category".		X			Revised
SR8699	100	The title of the definitions was revised for searchability and so they will be alphabetically in order. The definitions were not combined as portable stage switchboards only supply stage equipment whereas fixed stage switchboards supply stage and other equipment. Additionally, they need to remain as separate definitions as the requirements for them are located in two different parts of Article 520.		X			Revised
SRC113	100	There are multiple definitions and in accordance with the NEC Style Manual section 2.2.2.4, this definition was deleted.		X			Deleted definition
SRC116	100	There are multiple definitions and in accordance with the NEC Style Manual section 2.2.2.4, this definition was deleted.		X			Deleted definition
SRC119	100	In Informational Note No. 1 the "Std" following IEEE is deleted for consistency with how IEEE standards are referenced in other parts of the Code. SR-8445-NFPA 70-2021		X			Deleted item
SRC122	100	There are multiple definitions and in accordance with the NEC Style Manual section 2.2.2.4, this definition was deleted.		X			Deleted definition
SRC123	100	The Correlating Committee revised the definitions in accordance with the NEC Style Manual. These terms were revised in accordance with the following sections of the NEC Style Manual including but not limited to definitions 2.2.2 through 2.2.2.5 and acronyms 3.2.3.		X			Revised
SRC132	100	The definition of cable, circuit integrity indicates applicability to communications circuits. A separate definition for communications circuit integrity cable is deleted as it is covered by the base definition.		X			Deleted definition

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SRC138	100	The phrase (as applied to ΓÇª..) is being deleted due to this term only applies to the article referenced at the end of the defined term. This action is in accordance to the NEC Style Manual section 2.2.2.3.2. The reference structure of the third standard in Informational Note No. 2 was revised in accordance with the NEC Style Manual 4.1.3. Committee Comment No. 8342-NFPA 70-2021 [Definition: Corrosive Environment ΓÇö Swimming Pools, Fountain...]		X			Deleted item
SRC143	100	The phrase (as applied to ΓÇª..) is being deleted due to this term only applies to the article referenced at the end of the defined term. This action is in accordance to the NEC Style Manual section 2.2.2.3.2. SR-8557-NFPA 70-2021		X			Deleted item
SRC164	100	The phrase "as applied to natural and artificially made bodies of water" is deleted as redundant because the Article 682 attribution assigns this definition to apply only to that article in accordance with NEC Style Manual 2.2.2.3.2. Second Revision No. 8371-NFPA 70-2021 [Definition: Equipotential Plane.]		X			Deleted item
	<i>110</i>	<i>General Requirements for Electrical Installations</i>					
FR8487	110.3(B)	Listing standards such as UL1699 for Arc-Fault Circuit-Interruption permit the use of printed materials, QR codes, and internet addresses for ways to obtain installation materials. The new Informational Note informs the user of the Code that these acceptable means to obtain instructional information are available.		X			Revised
SR7666	110.3(A)	Although a part of one existing requirement states that "other factors" should be evaluated as part of the required examination in judging equipment, a "cybersecurity for network-connected life-safety equipment, to address its ability to withstand unauthorized updates and malicious attacks while continuing to perform its intended safety functionality," is justified as being specifically referenced as being required by the examination requirements of 110.3(A).		X			Revised
SR7668	110.3(B)	Not all equipment is listed or labeled and that installation instructions, if provided, should be used. See the definition of Identified (as applicable to equipment) in Article 100. The new informational note addresses any conflict that might exist in the installation or use instructions which should not circumvent Code requirements.		X			Revised
SR7788	110.14(A)	The deleted text was added by FR 8556.		X			Revised

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Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8772	110.16(B)	Panel 1 notes that First Revision No. 8772-NFPA 70-2021 has modified the Informational Notes to update the edition dates and comply with the 2020 NEC Style Manual. “Feeder supplied equipment” was added to the title and requirements of 110.16(B) as the panel concludes that the requirements in 110.16(B) must apply to both service equipment and feeder supplied equipment in other than dwelling units.		X			Revised
FR8625	110.17	This new section correlates with the definition of “Reconditioned” and provides clarity by distinguishing between reconditioning and servicing activities and maintenance activities.		X			New section
SR7732	110.17	“Applicable industry standards” and an informational note providing an example of information for preventative maintenance are added to provide additional clarity to the requirement.		X			Revised
FR8565	110.18	The reference to Articles 500 through 517 is in violation of the NEC Style Manual. The Informational Note is not needed as the articles on hazardous locations are clearly identified as well as the section on motors.		X			Revised
FR8663	110.20	These requirements will provide clarity to the Code on specific types of equipment that can and cannot be reconditioned and the process for approval by an AHJ.		X			New section
FR8580	110.21(B)	The phrase “markings such as labels or signs” was added to recognize that labels and signs are ways to meet the marking requirements in 110.21 and reorganized for consistency.		X			Revised
SR7751	110.21(A)(1)	The section is revised to clarify that labels should be applied or affixed onto, instead of merely placing on equipment.		X			Revised
FR8583	110.22(A)	It will be very helpful if identification and location of circuit source is indicated especially in large and high-rise buildings e.g. schools, high rise multifamily and large commercial buildings (Walmart, Target, Costco etc.).		X	X	\$ 25	Safety
SR7762	110.22(A)	The additional text clarifies that the identification and location of the circuit source does not need to be marked on the disconnecting means if the location of the source is evident.		X			Revised
FR8363	110.26(C)(3)	The Panel revised the references in Informational Notes in Article 90 and 110 to conform with the designated structure in 3.1.3.1 and 4.1.3 of the revised NEC Style Manual. The Panel concludes that doors should open at least 90 degrees which will allow a safe means of egress for personnel.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8633	110.26(A)(6)	The grade, floor or platform being flat and level in the working space is not addressed in the NEC. The Panel concludes that having a flat level working space is vital to the safety of personnel working on the equipment.		X			Safety
SR7801	110.26	The requirement from First Draft Section 110.26(A)(2)(b) is relocated to 110.26 because it relates to more than just working space width. It has also been revised to clarify the condition caused by open equipment door(s) which would impede access to and egress from the working space.		X			Revised
SR7765	110.27(C)	The informational note is removed as 110.27(C) pertains to warning signs and the three sections referenced in the informational note do not address warning signs.		X			Revised
FR8669	110.28	While it is understood that the Informational Notes are not enforceable, they do give insight how to understand what is being said in the Code. The addition of the Informational Notes 5, 6 and 7 add clarity about specific enclosure types. Informational Note No. 3 was modified to add a reference to 502.10(A)(3) based on PI-2382. Informational Note No. 4 was not modified because all dust tight enclosures are not suitable for use in Division 1 locations.		X			Revised
FR8672	110.28	The Panel revised the references in Informational notes in Article 90 and 110 to conform with the designated structure in 3.1.3.1 and 4.1.3 of the revised NEC Style Manual.		X			Revised
FR8962	110.28	This action makes the requirement technically correct in that the enclosed panelboard is in fact what this requirement applies to rather than only to where there is a panelboard installed that is not enclosed in a cabinet, enclosure, or cutout box. Also see the definition of "Panelboard, Enclosed" in First Revision No. 8470.		X			Revised
SR7706	110.29	A new requirement in 110.29 addresses "in sight from" for general use throughout the Code.		X			Revised
FR8673	110.31(A)(4)	CMP-1 adds a requirement for doors to open at least 90 degrees in the direction of egress. Including the Informational Note found in 110.26(C)(3) in 110.31(A)(4) provides the user the same clarity and information for installations over 1000 volts, Nominal.		X			Revised
FR8678	110.31	The Panel revised the references in Informational Notes in Article 90 and 110 to conform with the designated structure in 3.1.3.1 and 4.1.3 of the revised NC Style Manual.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7809	110.31	The existing Note in Table 110.31 is removed due to redundancy with existing Informational Note No. 1 and because notes to the tables are enforceable. Informational Note No. 2 is removed due to the redundancy with the wording in 110.31(A)(5).		X			Revised
FR8681	110.33(A)	CMP-1 adds a requirement for open doors to correlate with 110.26.		X			Revised
FR8771	110.33(A)(3)	CMP-1 adds a requirement for doors to open at least 90 degrees in the direction of egress. Including the Informational Note found in 110.26(C)(3) in 110.31(A)(4) provides the user the same clarity and information for installations over 1000 volts, Nominal Response		X			Revised
SR7810	110.33(A)	The requirement has been revised to clarify the condition caused by open equipment door(s) which would impede access to and egress from the working space. This National Fire Protection Association Report revision aligns 110.33(A) with 110.26(A).		X			Revised
FR8712	110.34(A)	The grade, floor or platform being flat and level in the working space is not addressed in the NEC. The Panel concludes that having a flat level working space is vital to the safety of personnel working on the equipment.		X			Revised
FR8349	110.72	In Section 110.72, reference to Article 770 was removed.					Revised
FR8715	110.73	A manhole cover that weighs over 100 lb would offer equivalent restriction of access to all equipment.		X			Revised
Chapter 2: Wiring and Protection							
FR7955	global	The existing informational note is deleted because it is no longer valid nor serves any useful purpose. Surge arresters 1000 volts or less are not considered or known as Type 1 SPDs so this note is incorrect and confusing for the users of the code.		X			Revised
	200	<i>Use and Identification of Grounded Conductors</i>					
FR8223	200.2	The section has been revised to correlate with the new definition of impedance grounded system and impedance grounding conductor.		X			Revised
FR8029	200.6(A)	The text is revised to indicate it is the insulation that is required to be identified. The list items of 200.6(A) and (B) are simplified for clarity. The reference in 200.6(A)(5) is updated for 690.31(C)(1) . Section 200.6(A)(6) is revised to indicate the grounded conductor of a mineral insulated conductor is to be identified by a white or gray marking. Section 200.6(A)(7) adds “accordance with” to be compliant with the NEC Style Manual.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8276	200.9	To comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual, the words substantially and readily were removed. Having the “white or silver” description language removes the need for the vague term “substantially”. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”.		X			Revised
FR8277	200.10	To comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC style manual, the words “normal” and “properly” were removed from (A).		X			Revised
	<i>210</i>	<i>Branch Circuits Not Over</i>					
SR8154	210	A new Article 235 is included in the 2023 NEC as a result of Second Revision 8155.		X			Revised
FR9180	210.1	CMP 2 supports the concept of creating Articles dedicated to circuits rated over 1000 Volts.		X			Revised
SR8207	210.2	1500 volts dc has been added to align with the proposed new Article 235. The circuit rating is addressed rather than the conductor rating to provide clarity. The rating of the circuit is used to determine the application of NEC requirements.		X			Revised
SR7916	210.4(A)	A reference to 300.3(B)(4) is added to correlate with the permission for column-width panelboard enclosures that the neutral conductor is permitted to originate in the pull box.		X			Revised
FR8929	210.5(C)(1)	This section is modified to clearly convey the requirement that where a premises with more than one nominal system voltage is present, the ungrounded conductors must be identified by phase or line and by the nominal system voltage as specified here-in. The changes further clarify that where a premise may have different nominal system voltages present that are of the same nominal system voltage, they are permitted to have the same identification.		X			Revised
FR9208	210.6	CMP 2 supports the concept of creating articles dedicated to circuits rated over 1000 Volts. Regarding those requirements under the purview of CMP 2, this committee supports modifications to Article 210 to facilitate the creation of a new Article 235 to include the “over 1000 Volts” requirements for branch circuits.		X			Revised
SR8157	210.6(D)	A new Article 235 is included in the 2023 NEC as a result of Second Revision 8155. This was the result of a Task Group formed based on Public Comment 635. This results in the need to revise the voltage limits in Section 210.6(D) to align with the change in the scope of Article 210.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8804	210.8	Listing of GFCIs was added as this provides the ability of the inspector and other agencies including the end user to ensure this technology has had review by and performance tested by a third party agency focused on reviewing the solution for functionality and performance when installed as per the NEC and manufacturer instructions.		X			Revised
FR8865	210.8(D)	The proposed language will ensure GFCI protection is located in the branch circuit to provide protection of any outlets supplying the list of appliances regardless of vintage and whether or not GFCI protection is included in the appliance or in the cord. This change adds clarity to what specific appliances shall be required to have GFCI protection and the methods the installer can use to provide this GFCI protection.			X	\$75	Expands coverage of GFCI
FR8896	210.8(F)	The proposed language will require GFCI protection for dwelling outdoor outlets when they are replaced and will increase safety. This section was modified to expand coverage of GFCI protection for dwelling outdoor outlets. The addition of these outlets address similar safety hazard exposures and should be afforded with the same level of protection as a receptacle outlet on the exterior of a dwelling unit. An editorial revision was made to move "or less" directly after 150 volts to be consistent with the same language found in Section 210.8(A).			X	\$75	Expands coverage of GFCI
FR8954	210.8(B)	All exceptions are moved to the end of the list items to align with the style manual.		X			Revised
SR7944	210.8(A)	Exception No. 4 is a new exception for an internal exhaust fan receptacle. This receptacle is located internal to the exhaust fan and is not accessible as a convenience receptacle meant for use in plugging-in equipment. *** This revision is a separately balloted change that modifies SR-7950.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7956	210.8(A)	GFCI protection was expanded to address any cord and plug appliance in the kitchen, regardless of whether the receptacle serves the countertop. The CPSC database demonstrates 104 electrocutions from 2011-2020, of which 81 percent were working on an appliance or other type of appliance or equipment. GFCI protection can be provided to provide protection for those who are working on cord-and-plug appliances and/or cordand-plug-connected equipment. Electrical hazards are not just due to the proximity of the appliance to water. These appliances and equipment have both the power supply and the grounded frame to complete the current path, creating the hazard to the individual. *** This revision is a separately balloted change that modifies SR-7950.			X	\$ 50	Reduce shock hazards
SR7961	210.8(B)(7)	Instead of fixed “and” stationary, the text was modified to recognize fixed “or” stationary for clarity. Equipment can’t be “fixed” and “stationary” at the same time. *** This revision is a separately balloted change that modifies SR-7958.		X			Revised
SR7966	210.8(D)	The referenced cooking appliances in the comment were added to 210.8(D). Due to the nature of the hazard with these installations. This requirement was placed in 210.8(D) to address all outlets and not be limited to only receptacle outlets found in 210.8(A). Section 210.8(D) now includes new list items (8) through (12), as these are sometimes hard wired to outlets and would not be a part of the GFCI requirements found for receptacles in laundry areas as part of 210.8(A) and 210.8(B). The shock hazard does not go away due to hard wired versus cord-and-plug connected equipment.			X	\$ 50	Reduce shock hazards
SRC105	210.8(A)	The informational note is deleted because the action taken in SR 7950 by CMP-2 was to remove “fire alarm” in the informational note since 760.41 modifies 210.8(A).		X			Deleted item
SRC106	210.8(A)	Informational Note No. 2 is deleted because the action taken in SR 7950 by CMP-2 was to remove “fire alarm” in the informational note since 760.41 modifies 210.8(A).		X			Deleted item
FR8970	210.11(c)(4)	The text is revised to clarify that the required receptacle outlets from 210.52(G)(1) must be served from at least one 120-volt, 20-ampere branch circuit, and that this 20-ampere branch circuit is also permitted to serve other receptacle outlets within the garage.		X			Revised
FR9167	210.12(F)	This new language addresses the ambiguity regarding these sleeping locations that are not fully defined as a dormitory unit but have the same electrical fire risk.		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		These locations present similar hazards regarding electrical fires on these circuits.						
FR9168	210.12	The revision clarifies that AFCI devices are required to be listed.		X				Revised
FR9176	210.12(C)	"In areas used exclusively as" was added before "patient sleeping rooms" to correlate precisely with Section 517.10(B)(2) as to where Part II of Article 517 is specifically not applicable, thereby avoiding confusion and providing clearer differentiation in health care facilities from other patient rooms used for delivery of medical procedures and therefore not used exclusively for sleeping.		X				Revised
FR9628	210.12(A)	This exception would provide a window of opportunity to continue the research currently underway between AFCI manufacturers and manufacturers of welding equipment. With the expansion of AFCIs, this equipment may need more time to address the possibility of unwanted tripping. CMP 2 is affording the manufacturers of these solutions time to address any compatibility concerns should any be identified.			X	minor		Reduce arcing
SR8205	210.12(C)	10-ampere branch circuits have been added to this subsection to align with the other subsections in 210.12. *** This revision is a separately balloted change that modifies SR-8203.		X				Revised
SR8206	210.12(D)	10-ampere branch circuits have been added to this subsection to align with the other subsections in 210.12. *** This revision is a separately balloted change that modifies SR-8203.		X				Revised
FR9202	210.13	CMP 2 supports the concept of creating articles dedicated to circuits rated over 1000 Volts. Regarding those requirements under the purview of CMP 2, this committee supports modifications to Article 210 to facilitate the creation of a new Article 235 to include the "over 1000 Volts" requirements for branch circuits.		X				Revised
SR8035	210.13	These exceptions recognize the extended level of protection provided by technologies that monitor the condition of equipment and act to protect should a fault occur in the equipment.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SRC030	210.13	The Correlating Committee action resolves a correlation problem between the responsibilities of CMP 2 and CMP 10 relative to providing alternative approaches to ground-fault protection. In addition the Correlating Committee directs that the word “disconnect” be changed to “disconnecting means” in this section for correlation with the defined term. Second Revision No. 8035-NFPA 70-2021 [Section No. 210.13]		X			Revised
FR9095	210.15	This First Revision complies with the direction of Standards Council Decision D#19-11.		X			Revised
FR9096	210.17	Assisted living facilities are now included in the list of occupancies where guest rooms and guest suites have the same branch circuit requirements as dwelling units. The section was reformatted to a list to add clarity. Informational Notes were added to provide appropriate guidance in the application of this section.		X			Revised
FR9097	210.18	The application of adopted Energy Code(s) and energy efficiencies in general are bringing forward the possible applications of 10-ampere branch circuits for loads such as LED lighting and specific dedicated limited loads such as alarm system panels.		X			Revised
FR9298	210.19	CMP 2 supports the concept of creating articles dedicated to circuits rated over 1000 Volts. Regarding those requirements under the purview of CMP 2, this committee supports modifications to Article 210 to facilitate the creation of a new Article 235 to include the “over 1000 Volts” requirements for branch circuits.		X			Revised
SR8042	210.19	The text has been changed to clarify that the voltage limitation is intended to apply to the circuit, not the conductor's insulation rating. 1500 volts dc has been added to align with the proposed new Article 235.		X			Revised
FR9100	210.23	The application of adopted Energy Code(s) and energy efficiencies in general are bringing forward the possible applications of 10-ampere branch circuits for loads such as LED lighting and specific equipment that are identified. A new 210.23(A) establishes the loads permitted and not permitted on a 10-ampere branch circuit. Revisions were made to the text for 15- and 20-ampere branch circuit loads to add “lighting outlets” and other editorial changes for clarity.		X			Revised
FR9190	210.24	A note was added to make it clear that receptacle outlets are not permitted on 10ampere branch circuits.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8049	210.24	14 AWG copper has been changed to 16 AWG copper conductors and are now allowed on 10-ampere rated branch circuits. This aligns with actions taken by CMP 6 during the first draft of 2023 NEC and correlates with existing 240.4(D)(2). Editorial changes were made to the footnotes and footnote references to correct editorial errors in the first draft.		X			Allows #16 copper on 10 Amp circuits
SRC043	210.24	The allowance for a 14 AWG copper-clad aluminum is changed to a #12 AWG from the table for a 10 ampere circuit to correlate with the requirements of 310.3 which permits 12 AWG copper-clad aluminum as the minimum size. Table 210.24(1) is revised to 14 AWG copper as the minimum size branch circuit conductor permitted by 310.3. SR-8049-NFPA 70-2021		X			Reverted to 2020 requirements to keep a #14 copper as the minimum size
FR9110	210.52(A)(2)	The language in 210.52(A)(2) has been revised to clarify receptacles along the wall space behind a stationary appliance is not included in the wall space.		X			Revised
FR9111	210.52(B)(1)	The language is revised to clarify the permitted application instead of indicating that it is required Response		X			Revised
FR9121	210.52(C)	The revised language enhances the clarity of the requirements in section 210.52(C).		X			Revised
FR9191	210.52(C)(1)	The figures are revised and the language “extending from the face of the counter” removed from the top figure. This clarifies the focus of the requirement is on the usable space behind the sink, range, or cooking unit.		X			Revised
SR8060	210.52(G)	The change is being made to ensure that the required receptacles of 210.52(G) are afforded GFCI protection and not misconstrued as being meant to serve an installed premises security system.		X			Revised
SR8090	210.52(C)	Removes the option to install receptacles below the countertop for islands and peninsulas, but also makes the requirement for receptacles on islands and peninsulas optional. When the optional route is taken, a provision for the installation of a future receptacle needs to be provided (such as an island installed on a slab-on-grade). Data sets compiled by CPSC epidemiologists show that there were 45 anecdotal reports of burn/other injuries between Jan 1991 through 2020, as well as an estimated 9,700 burn/other injuries treated in U.S. hospital emergency departments.			X	\$ 200	Reduce burn hazards

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
SR8209	210.52(C)(3)	If a receptacle outlet is not provided to serve an island or peninsular countertop or work surface, provisions shall be provided at the island or peninsula for future addition of a receptacle outlet to serve the island or peninsular countertop or work surface. *** This revision is a separately balloted change that modifies SR-8090. Section 210.52(C)(3) will be renumbered as 210.52(C)(2) by SR-8210.		X				Revised
SR8210	210.52(C)	After considering the revision made in the first revision, the committee has reviewed the language and decided the 2020 NEC language appropriately communicates the correct requirement. The items in 210.52(C) are renumbered due to the removal of item (1). *** This revision is a separately balloted change that modifies SR-8090.		X				Revised
SR8211	210.52(E)	The Committee has reviewed the informational note and decided it is no longer needed since 210.8 should always be consulted for GFCI protection requirements.		X				Revised
FR9143	210.62	This language was revised to appropriately reflect dimensional information.		X				Revised
SR8061	210.62	The language has been revised for clarity.		X				Revised
FR9145	210.63	A new informational note is added to guide the user to the appropriate GFCI requirement for this section.		X				Revised
SR8067	210.65(B)	The phrase “or major portion of floor space” is replaced with “or fraction thereof” to show that the requirement is to have one floor outlet for each 20 sq. m (215 sq. ft) meeting room space or smaller.		X				Revised
FR9148	210.70	The committee recognizing the need to support illumination upon failure of the control device powered exclusively by a battery that could impede safe egress. The failure mode of a battery powered device must ensure illumination. A sentence is included to permit battery powered control where the lighting outlets are automatically energized upon battery failure.		X				Revised
FR9149	210.70(A)(2)	Accessory structures are similar to attached and detached garages and have been added to the list in Section 210.70(A)(2). Requiring lighting in these areas enhances safety.		X				Revised
FR9152	210.70(A)(1)	It is important that laundry areas are illuminated as the use of these areas often result in the occupant carrying clothing and baskets. The area should also have a lighting means other than the options provided by a switched receptacle.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8212	210.70(A)(1)	The title has been changed to reflect the areas addressed in this section of the NEC. Kitchens, laundry areas, and bathrooms are not habitable areas.		X			Revised
SR8213	210.70(A)(2)	The word sloped is being removed because there are areas with flat, not sloped, sidewalk hatches that provide access to subgrade basements at dwelling units.		X			Revised
FR9198	210.1s(A)	With the introduction and availability of 10-ampere branch circuits, 10-ampere branch circuits have been added to the list of circuits requiring AFCI protection.		X			Revised
	<i>215</i>	<i>Feeders</i>					
SR8215	215.1	The Exception is not necessary based on 90.3 and the Manual of style in paragraph 4.1.1.		X			Deleted article
FR7685	215.2(A)(2)	This revision editorially adds clarity.		X			Revised
FR7686	215.9	This revision mandates that GFCI protection be listed.		X			Revised
FR7688	215.15	This revision adds a new section to reduce the hazards that exist when creating an electrically safe work condition in equipment supplied by tap conductors. The new requirement for barriers to provide protection against inadvertent contact mirrors the requirements in 230.62(C). This revision ensures the exposed energized parts on the line side of the OCPD are protected against inadvertent contact. When the disconnecting device to which the tap conductors are terminated is in the open position, the likelihood of contact with energized parts is significantly reduced.			X	\$ 50	Shock hazards
SR8216	215.15	Editorial changes are made to improve clarity and useability.		X			Revised
FR7689	215.18	Surge protection was included in the 2020 NEC to address the recognized need for surge protection to protect the sensitive electronics and systems found in most modern appliances, safety devices (such as AFCI, GFCI and smoke alarms) and equipment used in dwellings. Surges can enter through lightning, the utility or surges can be generated from internal utilization equipment. The addition of surge protection to 215.18 addresses the proper protection of areas served by feeders that are extended distances away from services that can result in limited surge protection.			X	\$ 100	Surge protection
SR8218	215.18(E)	The informational note is deleted because it repeats information already covered in 242.24.		X			Revised
SR8382	215.18(B)	The text is revised to indicate that the SPD is intended to protect the branch circuits and should not be installed remotely from the distribution equipment supplying branch circuits in the locations specified in 215.18(A).		X			Revised
	<i>220</i>	<i>Branch-Circuit, Feeder, and Service Load Calculations</i>		X			

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9188	220	Create First Revision-Article 220 reorganization CMP 2 reorganizes Article 220 for usability and clarity (Refer to Public Input 4240).		X			Revised
SRC031	220.1	The Correlating Committee directs this section be revised to include the new parts of article 220. The figure will also need to be revised. Committee Comment No. 8093-NFPA 70-2021 [Section No. 220.1]		X			Revised
FR9150	220.3	Table 220.3 was revised to add usability to the Code revised as follows: 1) Add “Fixed resistance and electrode industrial process heating equipment” reference Section 425.4. 2) Add “Capacitors” reference Section 460.8. 3) Change reference for “storage-type water heater” to refer to all of Section 422.11, as water heaters may be covered by either 422.11(E) or (F).		X			Revised
SR8105	220.3	Table 220.3 is revised to align with new Article 235, which includes all of the requirements for branch circuits 1000 V ac or 1500 V dc. This revision also modifies the voltage level reference for feeders moving 600 V to 1000 V, to align with the changes made in Article 215, which did the same.		X			Revised
SR8095	220.5(C)	Those areas within a dwelling that can’t be adapted for future use as a habitable room or occupiable space should not be considered when calculating loads.		X			Revised
FR9172	220.7	Technologies in Energy Management Systems (EMS) are being developed, listed, and installed. EMS are adding features to not only limit power flow in different system states (i.e. backup priority), but to also schedule loads (i.e. for time of use), or to configure loads to be non-coincident (i.e. optimize backup capacity). This revision builds upon those specific allowances to provide a new option for any load connected to a feeder or service conductor where those loads are controlled to an effective maximum current limit that restricts the demand load operated at one time.	X			varies	Allows lower loads when using an EMS
SR8106	220.7	Requirements that relate to the installation of the energy management system were removed, as the requirements for installing these products are located in Article 750.		X			Revised
FR9153	220.11	CMP 2 recognizes there are general lighting load requirements throughout the entire dwelling. The floor area calculation has been changed to encompass all areas of the dwelling.			X	varies	Accuracy of load estimate

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9154	220.12	The original research and data that led to the changes in Table 220.12 assumed a 0.8 pf that was left out in the last revision (refer to 2020 Public Input 3282). This recognizes the fact that the new higher efficiency solutions are not unity power factor like incandescent light bulbs. Multiple Revisions are made to Table 220.12:	X			varies	Unit lighting loads for schools and arenas lowered
FR9157	220.14(K)	For ease of use the reference to Table 220.44 was added so the user can find the applicable demand factors.		X			Revised
SR8111	220.14	The Panel reviewed 220.14(I) Receptacle Outlets and revised it to include a reference to the loads to be determined in 220.14(J) for office buildings, which is restored to 220.14 without demand factors, as those only apply when calculating feeder and service loads. The panel also reviewed 220.14(K) Other Outlets and revised it as appropriate to recognize the correct list in the current revision of (A) through (J) in 220.14.		X			Revised
FR9164	220.18(C)	This revision is to align the language in this section with Table 220.55 which applies to ovens, cooktops, and other electric cooking appliances. This revision will help to clarify that a cooktop and up to two wall ovens could be installed on the same branch circuit and would be considered the same as a range for the purpose of a branch circuit load calculation. Reference to Note 4 of the Table has been updated to refer to Notes 4,5, and 6 as modified by the First Revision in Table 220.55.		X			Revised
SRC042	220.40	The Correlating Committee directs this section be revised due to the relocation of 220.48 to a new Part VI and 220.58 to a new Part VII.		X			Revised
FR9189	220.48	CMP 2 has chosen to add a new section, 220.46, into Article 220 to provide separate demand factors for receptacles in health care type occupancies.		X			New section
SR8097	220.48	The Correlating Committee (SCR-39 in the 2020 Code cycle) and the Standards Council (Decision D#19-25) have established that CMP-2 has responsibility for occupancy-based load calculations and demand factors.		X			New demand factors for healthcare patient areas
FR9177	220.50	This section addresses both motors and air-conditioning equipment; the phrase “airconditioning equipment” is added to the title and the text is restructured into subsections to improve clarity. Reference to Section 440.6 is updated to refer to “Part IV of Article 440”, as this existing reference does not adequately address ampacity calculations for air-conditioning equipment. References		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		to requirements in Article 430 are correct, but are updated with additional information to improve clarity.						
FR9182	220.53	CMP 2 recognizes that EVSE loads can be significant, even in dwelling units and any reduction in load would not be prudent. Article 625 requires that EVSE loads be considered as continuous.		X				Revised
FR9170	220.57	A new section is added to address EVSE, and an informational note to refer to the applicable requirements in Section 625.42. The 7200 watt (volt-amperes) minimum requirement is based on a 30 ampere, 240 volt, single-phase circuit. CMP 2 is not adding demand factors as proposed, as the values proposed were not substantiated, and the requirements for sizing EVSE loads are in Section 625.42.		X				New section
SR8101	220.57	The nameplate on the unit already takes into account the 125% of the actual load, and therefore 7200 VA is the minimum value to be used in this calculation. When using the nameplate rating of the EVSE in this calculation, the continuous load is taken into account. The informational note is eliminated to avoid confusion.		X				Revised
SR8100	220.58	It has been established by the Correlating Committee (PC 632) and the Standards Council (D#19-25) that load calculations are the purview of CMP 2. Section 555.6 is being relocated to 220.58. This revision does not change the requirements for load calculations for marinas but relocates the requirements to Article 220.		X				New section
FR9173	220.83	This requirement is used to determine whether an existing service or feeder is sufficient. The word “feeder” was left out of the second part of the text and is being added.		X				Revised
FR9174	220.85	This requirement currently only addresses calculating a single feeder supplying two dwelling units, but the requirement should also apply to services. The text is revised to make this change.		X				Revised
FR9179	220.87	A year of demand data would capture all of the weather variations at a building, including when the PV or wind system is not providing power because of weather variability.		X				Revised
SRC036	220.110	The Correlating Committee (SCR-39 in the 2020 Code cycle) and the Standards Council (Decision D#19-25) have established that CMP-2 has responsibility for occupancy-based load calculations and demand factors. Section 220.48 is relocated to a New Part VI, Section 220.110. The Correlating Committee assigns responsibility for Part VI to		X				Revised healthcare loads

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		CMP-15. A revision to 517.22 would need to be made to reflect the relocation.					
	225	<i>Outside Branch Circuits and Feeders</i>					
FR7831	225	New Section 240.14 provides requirements that a GFCI be listed and shall not be reconditioned. By locating this requirement in Article 240 it establishes the fact that these requirements are important regardless of whether or not they are installed in a branch circuit (Article 210) or in a feeder (Article 215) or other location.		X			Revised
SR8698	225.3	Table 225.3 is modified to align with changes relocating over 1000 Vac or 1500 Vdc requirements throughout the code to Articles 235 and 245. This also includes changing reference to Article 490 to 495 due to article renumbering.		X			Revised
FR7693	225.5	This section is redundant and unnecessary because these requirements already exist in Articles 210 and 215.		X			Deleted section
FR7694	225.7	This section is redundant and unnecessary because these requirements already exist in Articles 210 and 220.		X			Deleted section
FR7706	225.41	This revision correlates with existing requirements for service supplied dwelling units and the revisions in 230.85. First responders will need the ability to disconnect the power to the dwelling without regard to whether it is feeder or service supplied.			X	\$ 323	Disconnect for first responders
SRC041	225.41(B)	The Correlating Committee corrected the reference for generator disconnects to 445.18. Second Revision No. 8275-NFPA 70-2021 [Section No. 225.41(B)]		X			Revised
FR7707	225.42	Surge protection was included in the 2020 NEC to address the recognized need for surge protection to protect the sensitive electronics and systems found in most modern appliances, safety devices (such as AFCI, GFCI and smoke alarms) and equipment used in dwellings. Surges can enter through lightning, the utility or surges can be generated from internal utilization equipment. The addition of surge protection to 225.42 addresses the proper protection of areas served by outdoor feeders that are extended distances away from services that can result in limited surge protection.			X	\$ 100	Surge protection for sensitive equipment
SR8379	225.42(B)	The text is revised to indicate that the SPD is intended to protect the branch circuits and should not be installed		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		remotely from the distribution equipment supplying branch circuits in the locations specified in 225.42(A).					
FR7906	225.56(B)	The structure of the informational note was revised to comply with Section 3.1.3.1 and 4.1.3 of the NEC Style Manual. The publishers name of the referenced standard was deleted. The document edition date was updated to 2017.		X			Revised
	<i>230</i>	<i>Services</i>					
SR8272	230	This action will combine all the requirements under the purview of CMP-10 for feeders, outside branch circuits and feeders, and services over 1000 Vac or 1500 Vdc into the new Article 235.		X			Revised
FR7719	230.2(A)	The revised text correlates the permission for an additional service in Article 230 with Article 705 Interconnected Electric Power Production Sources.		X			Revised
FR7721	230.7	The revised language prohibits feeder and branch circuit conductors from being installed in handholes and underground boxes with service conductors in order to limit the exposure to unprotected service conductors.		X			Revised
SR8236	230.7	It is important to clarify that grounding electrode conductors and supply side bonding jumpers are permitted in the same raceway or enclosure as service conductors. Revisions are made to enhance clarity and consistency in code language.		X			Revised
FR7724	230.24(A)	The revised language correlates the vertical clearance above roofs between 230.24 and 225.19. The metric reference was corrected.		X			Revised
FR7725	230.30(B)	Type TC-ER cable was added as an acceptable service entrance conductor in Part IV Service Entrance Conductors of the 2020 NEC. This revision adds Type TC-ER where identified for direct burial into 230.30(B).		X			Revised
SR8238	230.31(C)	Editorial changes are made to improve clarity and useability.		X			Revised
FR7729	230.33	The reference to 230.46 is being added to provide further detail on splicing service conductors.		X			Revised
FR7732	230.43	TC-ER must be identified being suitable for use as service entrance conductors.		X			Revised
SR8241	230.43	The addition of Flexible Bus Systems recognizes the wiring method for use in services as found in permitted uses in NEC 371.10 and listed in accordance with 371.6. The panel recommends that the correlating committee confirm that the ballot passes for the new Article 371.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7733	230.44	The words “material compatible with” are deleted as it is subjective. Cable tray manufacturers provide barriers that are identified for the use.		X			Revised
FR7736	230.62(C)	This revision clarifies that the intent of this section is to provide protection for exposed service conductors and circuit parts on the line side of the service OCPD or disconnect.		X			Revised
FR7739	230.67	Electronic life-saving equipment such as fire alarm systems, IDCI’s, GFCI’s, AFCI’s and smoke alarms, may be damaged when a surge occurs due to lightning, internal local switching as well as external utility switching. Egress equipment such as emergency lighting, smoke control systems, occupant evacuation elevator may also be damaged when subjected to surge. In many cases, electronic devices and equipment can be damaged and rendered inoperable by a surge and yet this damage is undetected by the owner. It is practical to require a SPD to provide a general level of protection.			X	\$ 250	Add SPD for sleeping rooms in hotels, dorms, nursing homes
FR8299	230.67	The present requirement provides no lower limit to the nominal surge rating (In) of the SPD. It is necessary to provide a lower limit for this rating to ensure that the SPD is suitable for the electrical environment which is expected at the service entrance.		X			Revised
SR8244	230.67(B)	Editorial change was made to improve clarity and useability.		X			Revised
FR7759	230.71(B)(3)	This change references 230.62 which defines the intent of a service barrier while maintaining the one service disconnect in each vertical section and the barrier requirement.		X			Revised
FR7798	230.71(B)	Transfer switches are added to clarify that transfer switches must be compartmentalized. A new informational note is provided to explain typical construction of transfer switches identified as service equipment.		X			Revised
FR7799	230.71(B)	This exception provides the AHJ with the ability to permit the installation of up to six disconnects in a single enclosure in equipment installed in compliance with editions prior to the 2020 NEC.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7800	230.71(B)	This revision adds a new list item to address motor control centers with more than one service disconnect as presently permitted in 430.95. A limitation of up to two service disconnects in a single motor control unit with barriers between units is added to align with the expected protection provided by other list items in 230.71(B). A correlating public input has been submitted to delete an exception to 430.95. CMP-10 requests the NEC-CC review the action on that public input for correlation.		X			Revised
FR7801	230.71(B)	While 230.71(B)(1) permits meter centers with a single disconnecting means, a new list item is added for clarity.		X			Revised
FR7741	230.75	This revision replaces text that was inadvertently removed in the 2020 NEC cycle.		X			Revised
FR7938	230.82	It is important for control power circuits for protective relays to maintain power and be active when the service disconnect is open. This is necessary to eliminate the 10 to 100 millisecond start-up delay that the typical protective relay requires to transition from unpowered to active. Should there be a fault upon closing the service disconnect, the protection must act immediately to clear the fault to increase the likelihood of protecting workers.		X			Revised
FR8282	230.82	This revision provides clarity by identifying the disconnects with specific references to 230.85(B)(2) and (B)(3).		X			Revised
SR8253	230.82	The term energy management system is used to maintain consistency and clarity throughout the code.		X			Revised
FR8300	230.85	This revision provides clarity on the use of equipment marked "suitable for use as service equipment" and "suitable only for use as service equipment", installed on the supply side of the service disconnect. Additionally, this revision provides clarity in stating that conductors on the load side of (B)(2) and (B)(3) are service conductors.		X			Revised
FR8301	230.85(C)	This revision clarifies the intent of this section by specifically identifying requirements for "replacements." Response		X			Revised
FR8302	230.85(D)	This revision provides correlation with other emergency disconnect requirements in this code. First responders may not be aware of the location of other emergency disconnects not co-located with the emergency disconnect at the service. CMP-10 requests that the NEC-CC correlate emergency disconnect marking requirements throughout the NEC.			X	\$ 100	Disconnect for first responders

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
			Sub Code:				
FR8303	230.85(E)	This revision editorially relocates individual marking requirements. Additional requirements are added for location, color and font.		X			Revised
SR8262	230.85(B)	Informational Note 2 is revised to remove requirements. The note provides explanatory material related to the mandatory requirement is in 230.85(B)(3). All equipment listed and marked "suitable only for service" is marked "Service Disconnect." The equipment could not be applied in accordance with 110.3(b).		X			Revised
SR8265	230.85(C)	Maintenance or repair such as replacing storm damaged service entrance conductors or raceways or fittings should not trigger the requirement for the addition of an emergency disconnect.		X			Revised
SR8268	230.85(D)	The language has been revised to address the identification for isolation means of other energy sources. An information note is also added to provide guidance of energy source isolation requirements.		X			Revised
SRC067	230.85(D)	The Correlating Committee corrected the reference for generator disconnects to 445.18. Second Revision No. 8268-NFPA 70-2021 [Section No. 230.85(D)]		X			Revised
FR7773	230.90	This revision correlates the exception with the permissive requirements in 310.12.		X			Revised
FR7778	230.91	This revision expands the safety driven concept in 230.62(C) to require isolation through separation on larger services.		X			Revised
SR8453	230.91	The requirements in 230.91(B) are removed to align with the existing requirement for line side barriers in 230.62(C) and the lack of substantiation that the line side arc flash hazard is reduced. The line side barriers reduce the likelihood of an event initiating on the line side. The heading to 230.91(A) was removed to comply with the NFPA Manual of Style.		X			Revised
	231	<i>Electric Power Sources Interconnected with an Electric Utility</i>					
FR7974	231	This First Revision is developed to address issues that have existed for multiple NEC cycles with respect to alternative energy systems and how they connect and interface with service equipment.		X			New article
SR8723	231	New Article 231 is deleted in support of the revision provided in PC 1098. The provisions of Article 231 will be redundant if PC 1098 is accepted. PCs-321 & 325: These public comments were resolved by the deletion of Article 231.		X			Deleted article
	235	<i>Branch Circuits, Feeders, and Services Over</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8155	235	Article 235 was proposed (PC 285) by a Task Group formed based on Public Comment 635.		X			New article
SR8472	235	This action will combine all the requirements under the purview of CMP-10 for feeders, outside branch circuits and feeders, and services over 1000 Vac or 1500 Vdc into the new Article 235.		X			Revised
SRC161	235	The Scope statement is revised to align with the wording in 210.1 and incorporate “feeders” and “services” into the title of Article 235, and the Scope statement in 235.1 (reference SR 8472). Informational Note is also added, consistent with CMP 10’s intent, based on the complete record of SR 8472. In addition, the separate actions by CMPs 2 and 10 expanded Article 235 to require the structure to include “Parts”. While Part III, added by CMP 10, addresses “Feeders”, there are no Parts I and II. Part I is added for “General”, and Part II is added for “Branch Circuits”.		X			Revised
	240	<i>Overcurrent Protection</i>					
FR7802	240.4(B)	This revision recognizes and permits an adjustable overcurrent protective device, such as a circuit breaker to be used provided the protection does not exceed the next higher standard overcurrent device rating.		X			Revised
FR7803	240.4(H)	This first revision recognizes the permissive requirements of Section 310.12. A new first level subdivision is added to correlate with the general requirements of 240.4.		X			New section
FR7827	240.4(D)(1)	The term wire has been updated to conductor to align with the NEC Style Manual. Class CF fuses are added as an option to 240.4(D)(1)(2)(c) and 240.4(D)(2)(2)(c). Class CF fuses have let-through values equivalent to Class J fuses and would provide equivalent protection. This also aligns the NEC with product standards such as UL 508A, the Standard for Safety for Industrial Control Panels that allow Class CF fuses for 16 AWG or 18 AWG copper conductors.		X			Revised
FR7920	240.4	The reference standard edition date was updated.		X			Revised
SR8285	240.4(D)	A new list item (3) is added to address specific requirements for 14 AWG Copper-Clad Aluminum with a maximum overcurrent protection rating of 10 Amps to align with the other small conductors permitted in 240.4(D). The following sections were renumbered accordingly.		X			Revised
FR7828	240.6(A)	This revision only adds a new 10 amp standard rating for circuit breakers. 10 amp fuses are permitted and circuit breakers rated at 10 amps are available and should also be permitted.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7947	240.6(C)	SMART devices are becoming more commonplace, especially with regards to industrial and life-safety equipment such as circuit breakers.		X			Revised
SR8394	240.6(C)	The password protection indicated in 240.6(C)(4) is an integral feature of the circuit breaker. Other means of electronically locking are applicable to doors in (C)(3). An informational note is added to provide additional guidance regarding physical network.		X			Revised
FR7805	240.7	Overcurrent protection devices protecting branch, feeder or service conductors are safety critical devices that have long been required by AHJs to be listed by third party laboratories.		X			New section
FR7807	240.11	The existing NEC allows an overcurrent condition on one of the feeders that are not required to selectively coordinated with the service device, to open the service overcurrent device. This revision assures that the service overcurrent protective device is less likely to open due to an overcurrent condition on a feeder that is not currently required to selectively coordinate with the service overcurrent protective device.		X			New section
FR7809	240.12	The section title is modified to more clearly address the requirement. This addresses installations where an orderly shutdown is required for personnel or equipment.		X			Revised
FR7829	240.13	Reconditioning GFPE is not dependent upon where these devices are installed. This section is being revised to establish the general requirement for all equipment that provides GFPE not to be reconditioned and all equipment that provides GFPE to be listed.		X			Revised
SR8631	240.14	This section is deleted as the listing requirements are relocated to 240.7 (see SR-8295) and the reconditioned equipment requirement are relocated to 240.2 (see SR-8704).		X			Revised
SR8440	240.16	This requirement is relocated from the definition for "Overcurrent Protective Device, Branch-Circuit" to comply with the NEC Style Manual 2.2.2.2.		X			New section
FR7810	240.21(C)(2)	This revision is editorial in nature and provides clarity by correlating with similar text in 240.21(C)(6). Editorial revision to the informational note was to comply with the NEC Style Manual.		X			Revised
FR7811	240.24(A)	This revision addresses two issues.		X			Revised
FR7812	240.24(B)(2)	Sleeping rooms in dormitories are added to this requirement to correlate with 210.60.		X			Revised
FR7813	240.24(E)	This revision prohibits overcurrent protective devices in all bathrooms. Also overcurrent protective devices are prohibited in showering facilities, or locker rooms with		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		showering facilities as they represent similar hazards. This revision recognizes the difficulty of accessing occupied bathrooms. There is no practical reason to continue with this permissive requirement.						
FR7814	240.60€	This section is added to require fuse reducers to be listed. The use of listed products helps ensure that the reducers will not be likely to create poor connections.		X				New section
FR7815	240.67(B)	The references to IEEE 1584 and NFPA 70E are modified to recognize the current standards. The structure of the Informational Note No. 3 was revised to comply with Section 3.1.3.1 and 4.1.3 of the NEC Style Manual Response		X				Revised
FR7834	240.67	This revision editorially deletes the delayed implementation date and adds a reference to first level subdivision (C) in the parent text. Arc energy reduction requirements for circuit breakers rated at 1200 amps have been in the NEC since the 2011 edition. Means, methods and technologies to provide arc energy reduction for circuit breakers and fuses rated 1200 amps or more have increased significantly. Therefore, the level of protection is increased by reducing the value to protect all to 1000 amp installations.		X		varies		Lowers threshold for arc flash mitigation. Repealed in 2nd draft 8323
SR8323	240.67	No technical substantiation was provided to reduce the threshold for the requirement for Arc Energy Reduction methods where fuses are installed from 1200 amps to 1000 amps. The hazards posed by arc flashes are known. The panel is open to reconsidering the threshold for arc flash protection during the next code cycle based on scientific data in accordance with the NFPA Regs.		X				Reverts arc flash mitigation levels to 2020 requirement
FR7927	240.86(A)	This informational note was added to this location. It was previously after 240.86(B) and applying to this section.		X				Revised
FR7928	240.86(B)	This informational note was revised to only apply to this section.		X				Revised
FR7818	240.87	This revision editorially deletes the delayed implementation date and adds a reference to first level subdivision (C) in the parent text. Arc energy reduction requirements for circuit breakers rated at 1200 amps have been in the NEC since the 2011 edition. Means, methods and technologies to provide arc energy reduction for circuit breakers and fuses rated 1200 amps or more have increased significantly. Therefore, the level of protection is increased by reducing the value to protect all to 1000 amp installations.		X		varies		Reduce threshold for arc flash mitigation. Repealed in 2nd draft 8320

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8320	240.87	No technical substantiation was provided to reduce the threshold for the requirement for Arc Energy Reduction methods where fuses are installed from 1200 amps to 1000 amps. The hazards posed by arc flashes are known. The panel is open to reconsidering the threshold for arc flash protection during the next code cycle based on scientific data in accordance with the NFPA Regs.		X			Reverts arc flash mitigation levels to 2020 requirement
FR7819	240.87(B)	The references to IEEE 1584 and NFPA 70E are modified to recognize the current standards. Informational Note No. 4 was revised for clarity.		X			Revised
FR7824	240.88	This revision removed requirements for medium and high voltage circuit breakers and an additional FR creates new subdivisions in 240.102 in Part IX. Editorial revisions are made to the remaining text.		X			Revised
FR7817	240.89	Trip units generally accept inputs from protective relays and/or current transformers to sense faults and output signals to the mechanical operating mechanism to clear faults based on design parameters of the circuit breaker.		X			New section
	242	<i>Overvoltage Protection</i>					
FR7962	242	This first revision requests that NFPA staff editorially renumber Article 242 for correlation with other Articles in this code and for usability.		X			Revised
FR7956	242.7	A new 242.7 is established to address reconditioned equipment.		X			New section
FR7957	242.9	This revision requires that an SPD provide an indication to the occupant that it is in working order. This is necessary to ensure that the desired level of protection continues to exist and if the SPD should fail, the occupant can identify a nonoperative SPD.		X			New section
FR7949	242.26	This section is not necessary.		X			Deleted section
FR7958	242.41	This revision prohibits the reconditioning of surge arresters. These devices are not suitable for re-conditioning.		X			New section
FR8283	242.42	The duty cycle rating of a surge arrester is a short-term temporary overvoltage the arrester can withstand based on the maximum system voltage present and should not be less than 125% of the maximum system voltage.		X			Revised
SR8335	242.42	The language is revised in the parent text for consistency and clarity.		X			Revised
	245	<i>Overcurrent Protection for Systems Rated Over</i>					
FR7940	245	CMP-9 provides text for a new Article 245 based on the actions and substantiation of the Medium Voltage Task Group.		X			New article

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7853	245	This Second Revision addresses the removal of “Part III. Overvoltage Protection” due to the change made by First Correlating Revision No. 387, which removed “overvoltage protection (surge arresters)” from the scope of Article 245. With this change in scope, and the removal of Part III, subdivision of the Article is no longer needed, so the Article is restructured to remove them.		X			Revised
SRC088	245.1	The Correlating Committee has purview over article scope statements and has revised the scope of Article 245 for alignment with the article title.		X			Revised
SRC087	245.2	The Correlating Committee has revised this section to align with 90.2(A) and the structure of 240.2.		X			Revised
	250	<i>Grounding and Bonding</i>					
FR7990	250	The proposed revision clarifies that bonding connections can create objectionable current. To add clarity and comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual “suitable” should not be used in Item (B)(4). In (C), the word temporary is removed to clarify that non-objectionable currents can be caused by conditions that may not be temporary.		X			Revised
FR7992	250.6(E)	The revision clarifies the intent of the section and aligns the language with industry standards. To comply with Section 3.3.4 Word Clarity in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”.		X			Revised
FR8159	250.20	The phrase “unless prohibited elsewhere in this Code” is added to 250.20 to allow permission of requirements in other articles of the Code to allow circuits to be ungrounded.		X			Revised
FR8158	250.22	Section 250.22 is removed to comply with Section 4.1.1 of the NEC Style Manual which requires general requirements not to be duplicated as specified in the structure of the Code in 90.3 as the requirements are located in their respective Articles. The contents of 250.22 are relocated to an informational note in 250.20.		X			Deleted section
FR7999	250.25	The word “service” was added to the title of the section to improve clarity for the application of the requirements. To comply with 2020 NEC Style Manual Section 4.1.3 the reference structure was changed.		X			Revised
FR8010	250.26	The word "if" corrects the usage to the NEC Style Manual and makes it clear that the requirements in this section apply if the system is grounded, whether it is required to be grounded or is done so voluntarily. In addition, the phrase "as specified in the following" is unnecessary for proper application and enforcement.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8018	250.28(C)	Since not all of the connection methods that are included in 250.8 are suitable for all types of main or system bonding jumpers, the revision will ensure the NEC requires that a suitable method be used.		X			Revised
FR8233	250.30	To add clarity and comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC style manual “considered” was changed to “treated”.		X			Revised
FR8235	250.36	The conductor that connects the neutral point to the impedance of an impedance grounded system does not meet the definition of a grounded conductor in Article 100.		X			Revised
FR8072	250.53(E)	The title of this section is changed because it is consistent with the use of defined terms. Copper-clad aluminum was added because it is already allowed in the NEC. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”.		X			Revised
SR7974	250.53(A)	The order of the sentences was modified for clarity.		X			Revised
FR8073	250.58	To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”. The last sentence of 250.58 was deleted because the requirement already exists in 250.50.		X			Revised
FR8075	250.64(G)	Routing grounding electrode conductors through a ventilation opening of an enclosure can result in reduced air flow and overheating of the associated equipment.		X			New section
FR8090	250.64(B)(4)	The reference to 300.50 was added to clarify that it does not apply to grounding electrode conductors for circuits over 1000 volts.		X			Revised
FR8094	250.64(D)	The text is added to remove a conflict with 250.24(A)(1). Section 250.64(D)(2)(2) specifically applies to buildings and structures supplied by other than services. To add clarity and comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual “sufficient” should not be used in (D)(1)(3).		X			Revised
FR8098	250.66(A)	Copper-clad aluminum was added to 250.66(A) because it is recognized in the NEC as an acceptable conductor material.		X			Revised
FR8157	250.68(C)	Text is added to clarify that the 5’ distance applies to the length of water piping, not the distance from the building entry to the connection on the water piping. To comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC style manual “usual” should not be used in (C)(2) and (C)(3).		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8164	250.70	The section is revised to create an (A) General and (B) Indoor Communications Systems for clarity. For other than item (3), the examples in the list are not necessary. The first sentence is inclusive of the examples of permitted connection methods and is more exhaustive. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”. The informational note adds helpful information.		X			Revised
FR8165	250.92(B)	Changes are made to (B)(1) because some of the connection methods provided in 250.8(A) may not be suitable for making the connection that is required. The revision to item (2) recognizes that many enclosures have threaded entries rather than threaded hubs. The order of the words was also rearranged for clarity.		X			Revised
FR8166	250.94(B)	Requirements are added to indicate the minimum size of the conductor that connects the busbar to the grounding electrode system. To add clarity and comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual, “sufficient” should not be used. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if” in the exception.		X			Revised
SR7986	250.94(B)	The editorial changes add clarity.		X			Revised
FR8167	250.96	Revision was made to clarify that the supplementary equipment grounding conductor is to be a wire type conductor. To comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual “safely” should not be used. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if” in (A) and (B).		X			Revised
FR8258	250.102(C)	Revisions are made regarding connection of conductors in parallel and including supply-side bonding conductors. Revisions are made to clarify the sizing of bonding jumpers for a single raceway or cables as well as for sizing a bonding jumper that is connected to two or more raceways or cables. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”.		X			Revised
FR8176	250.104(C)	To add clarity and comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual “sufficient” should not be used in 250.104(C)(4) and (5). The AWG designation is added following 3/0 to be technically correct.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8226	250.104(D)(3)	The word “water” is added as appropriate to clarify the type of metal piping that is to be bonded.		X			Revised
FR8177	250.109	Changes are made to this section to ensure that adapters such as mud rings, and extension rings or fittings are in good electrical contact with the metal enclosure or are bonded to ensure an effective ground fault current path.		X			Revised
SR7997	250.109	An informational note was added to clarify that the text in 250.109 does not supersede the requirements of 250.97.		X			Revised
FR8179	250.114	References to entire articles were deleted to comply with the NEC Style Manual.		X			Revised
FR8200	250.119	This revision clarifies that the identification applies only to equipment grounding conductors of the wire type. Clarity is improved by adding a new (A) General for the first subdivision, subsequent sections lettering is revised. Clarity is improved for the requirements for identification of conductors 4 AWG or larger in (B). To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if” in Exception No. 1.		X			Revised
FR8219	250.120	The Informational Note is made to update the document title from the UL Guide Information on FHIT to the current title.		X			Revised
FR8281	250.122	The subject of 250.122 is sizing wire type equipment grounding conductor, not the other choices included in 250.118.		X			Revised
SR8071	250.122(B)	An informational note is added to provide guidance on a method for calculating equipment grounding conductor sizes.		X			Revised
FR8228	250.130	Section 250.130 provides coordination with Article 406 regarding the replacement of non-grounding type receptacles but is silent on replacement of snap switches without an equipment grounding conductor as permitted in 404.9(B), for equivalent safety concerns.		X			Revised
SR8073	250.130(C)	The revised language improves clarity and readability without changing the intent of the rule.		X			Revised
FR8230	250.136	This modification revises the title to 250.136 to reflect the content in the text. To add clarity the section was revised and to comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual the term “considered” is not used.		X			Revised
FR8231	250.140	Copper-clad aluminum was added to 250.140(3) because it is recognized in the NEC as an acceptable conductor material. To comply with Section 3.3.4 Word Clarity, in		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if.						
FR8238	250.144	This revision clarifies the requirement and simplifies the language. An additional requirement is added to ensure the means for termination is compliant with 250.8. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if.		X				Revised
FR8240	250.148	Changes made to this section clarify that all equipment grounding conductors in a box are to be connected to each other.		X				Revised
FR8265	250.162	To add clarity by what is meant with the term “adjacent” and to comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual. To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”.		X				Revised
FR8100	250.166	Copper-clad aluminum was added to 250.166 because it is recognized in the NEC as an acceptable conductor material. To add clarity and comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”.		X				Revised
FR8269	250.174(C)	To add clarity and comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual “suitable” should not be used.		X				Revised
FR8104	250.178	Copper-clad aluminum was added to 250.178 because it is recognized in the NEC as an acceptable conductor material. To add clarity the second sentence was revised and to comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual, “considered” should not be used.		X				Revised
FR8271	250.184	To add clarity the sentence was revised to comply with Section 3.2.1 Unenforceable Terms of the 2020 NEC Style Manual “sufficient” should not be used.		X				Revised
FR8241	250.186	A new definition of “impedance grounded system” has been created. Currently, no definition exists for an impedance grounded system in the NEC. The changes in 250.186 reflect this new definition. An editorial correction is made in 250.186(A). To comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating a condition, the word “where” was changed to “if”.		X				New definition
FR8106	250.190	Copper-clad aluminum was added to 250.190 because it is recognized in the NEC as an acceptable conductor material. To add clarity and comply with Section 3.3.4 Word Clarity, in the 2020 NEC Style Manual, when stating		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		a condition, the word “where” was changed to “if” in the exception.					
Chapter 3: Wiring Methods and Materials							
FR8616	global	Terminations, MV cable joints and MV cable connectors are being added to provide for complete system installation.		X			Revised
	300	<i>General Requirements for Wiring Methods and Materials</i>					
FR9269	300.3(B)	Conduit bodies are not specifically mentioned in the existing language however, the requirements for them are the same. Adding “conduit body” into this section will provide language to address any possible confusion as to applying the rule.		X			Revised
FR9319	300.4(G)	The text has been revised to make it clear that the protective fitting needs to be installed prior to the installation of the conductors.		X			Revised
FR9370	300.4(A)(1)	The Public Input looked to replace rigid non-metallic conduit with type PVC Conduit. The committee made the change to rigid PVC Conduit and RTRC because both are rigid non-metallic conduits that could be used in this situation.		X			Revised
FR9375	300.4(E)	No technical substantiation has been provided as to a problem being caused with other types of roofing.		X			Revised
FR9377	300.4(F)	The Public Input looked to replace rigid non-metallic conduit with type PVC Conduit. The committee made the change to rigid PVC Conduit and RTRC because both are rigid non-metallic conduits that would be used in this situation.		X			Revised
FR9382	300.4(E)	The addition of malleable iron fittings or boxes addresses the concerns identified in the public input. “Heavy duty box” was not utilized because there is no definition, nor is the term utilized in the NEC.		X			Revised
FR9408	300.4(E)	The added exception will recognize different construction techniques available that utilize poured concrete on top of the metal roof decking. The addition of the concrete reduces the risk of screws penetrating into the wiring methods below the deck.		X			Revised
SR8537	300.4(A)	Section 300.4(A) has been revised to make it clear that no matter what side a stud is measured from, the edge of the hole cannot be closer than 32 mm (1 1/4 in.). Cables installed less than 1 1/4 inches from the edge require protection. Enforcement of the code is the responsibility of the AHJ. Universal enforcement of the code is outside of the scope of the NEC.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8541	300.4(E)	Malleable Iron fittings are only one type associated with Rigid Conduit and IMC and there can be arguments made there are better options available that offer superior physical protection. The change to 'associated listed steel or malleable iron covers these other types.		X			Revised
FR9323	300.5(A)	The current UL directory recognizes the use of Stainless Steel, Aluminum (when provided with approved supplemental corrosion protection), and Galvanized EMT for direct burial applications. As such, column 2 was revised to clarify that Electrical Metallic Tubing (EMT) is included in the list of "Other Approved Raceways".		X			Revised
SR8551	300.5(A)	There are other types of EMT aside from galvanized, and not all require supplemental protection.		X			Revised
SR8560	300.6	As indicated by the submitter enclosures are not limited to "meter socket enclosures".		X			Revised
FR9364	300.7(B)	A new informational note is added informing that an installation guideline for expansion and expansion deflection fittings is available.		X			Revised
FR9225	300.10	CMP3 reaffirms that Section 300.10 covers cable armor and therefore it is appropriate to include cable armor in the title for clarity.		X			Revised
FR9230	300.11(C)	This revision includes Class 3 in 300.11(C)(2) and aligns this section with 725.143.		X			Revised
FR9233	300.14	The free conductor is permitted to be a splice. The addition of this text makes that clear and free of interpretation.		X			Revised
SR8567	300.14	The proposed language modification will aid with clarity and consistency and is consistent with other sections of the NEC.		X			Revised
FR9241	300.15	Clarification that these are conductor splice, termination, junction, and pull points was needed and this revision will eliminate misinterpretations.		X			Revised
FR9249	300.15(G)	The language in the section does reference cables, which as indicated in the public input, is not currently in the section heading. Adding the words "and cables" into the section heading, while not a technical change, will clarify the intent of the requirement.		X			Revised
FR9256	300.17	Cables are permitted to be installed in raceways when permitted by the specific cable section. As cables may in fact become damaged during installation, by adding the wording "and cables" into the heading and section, it will become clear that cables must also meet this requirement.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8570	300.18(A)	As indicated, identified is a defined term in Article 100 and is not applicable as referenced in this sentence. "In accordance with" is the correct wording and will aid in clarity.		X			Revised
FR9262	300.19(B)	As indicated in the public input, which was submitted by a member of the Correlating Committee Task Group for Circuit Integrity Cable, replacing "rated" with "resistive" as used in other sections of the NEC will add in usability and consistency. A similar public input (PI No. 2140) from the same task group justified keeping both electrical circuit protective, and adding 'or fire-resistive cable'. This result is correlated here.		X			Revised
FR9265	300.22(C)	NFPA 90A has recently been updated to the 2021 edition. The informational note is updated to reflect this.		X			Revised
FR9267	300.25	An exterior door off an exit enclosure is part of the means of egress. The exterior light for that door is typically fed from the circuit that feeds the lights in the exit enclosure. Adding this exception will provide clarity to explain that the exterior door lights can be supplied from the interior stairway lighting circuit.		X			Revised
SR8571	300.25	Fire-resistance rating is a defined term in the building Code and was accepted to add clarity to the section.		X			Revised
SR8481	300.26	This action addresses the concerns of the Correlating Committee as stated in PC 666 to clarify the use and application of the terms remote-control, branch circuit and signaling circuit, branch circuit as it applies to the new Article 724.		X			New section
FR9322	300.50(A)	The current UL directory recognizes the use of Stainless Steel, Aluminum (when provided with approved supplemental corrosion protection), and Galvanized Electric Metallic Tubing (EMT) for direct burial applications. As such, column 2 was revised to clarify that EMT is included in the list of "Other Approved Raceways".		X			Revised
	305	<i>General Requirements for Wiring Methods and Materials for Systems Rated Over</i>					
SR8485	305	Article 305 is general requirements for medium voltage. "Part I General was deleted and thus "General" was added to the Article title.		X			Revised
SR8486	305	Part II through Part IV have been deleted as the installation requirements are staying with their installation Articles and Article 305 will cover general requirements.		X			Revised
SRC023	305.7	Committee Statement indicates the intended action was for the relocated Section 305.3 to be titled "Other		X			Revised

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Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		Articles". This SCR makes this correction. SR-8493-NFPA 70-2021					
	<i>310</i>	<i>Conductors for General Wiring</i>					
SR8432	310	The panel acted to revert to 2020 code language for the minimum size of conductors for 310.3(A), Tables 310.16 and 310.17, and wiring methods in multiple articles, including Articles 320, 330, 334, 336, and 340.		X			Revised
SRC044	310.1	The Correlating Committee directs the Informational Note in 310.1 to be deleted as it does not comply with Section 4.1.4 of the NEC Style Manual. The Panel action on SR-8276 continues to reference an entire Article in violation of the NEC Style Manual. The Panel and the Correlating Committee need to comply with the NEC Style Manual. Second Revision No. 8276-NFPA 70-2021 [Section No. 310.1]		X			Deleted item
FR8371	310.3(A)	The minimum conductor sizes for copper and copper-clad aluminum are being reduced to 16 AWG copper and 14 AWG copper-clad aluminum. These revisions are based on testing submitted in support of the use of copper-clad aluminum conductors for 10 amp circuits, and the decades of successful use of 16 AWG copper conductors in fixture wire, motor wiring, control wiring, and other current-carrying applications as permitted in the NEC.		X			Revised
FR8372	310.3(B)	The composition requirements for copper-clad aluminum were removed from the definition and relocated into this section. The language was reorganized into a list format. Language was added to require that the copper-clad aluminum conductor be listed. Insulation type XHHN and XHWN were added to the list as they were newly added to the code.		X			Revised
SR8404	310.3(A)	The panel acted to revert to 2020 code language for the minimum size of conductors for 310.3(A), Tables 310.16 and 310.17, and wiring methods in multiple articles, including Articles 320, 330, 334, 336, and 340.		X			Revised
FR8314	310.10(G)	Editorial corrections were made to clarify this section. Equipment grounding conductors and supply-side bonding jumpers are not always required to be 1/0 AWG or larger. New language on cross sectional area is not needed. New proposed exception adds no value.		X			Revised
SR8420	310.10(G)	The language in these sections have been revised to provide clarity and usability when referencing conductors in parallel installations.		X			Revised
FR8336	310.15	Editorial changes have been made throughout 310.15 to align with the style manual and revised to use industry terminology.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8427	310.21	The minimum conductor sizes for copper and copper-clad aluminum are being reduced to 16 AWG copper and 14 AWG copper-clad aluminum. These revisions are based on testing submitted in support of the use of copper-clad aluminum conductors for 10 amp circuits, and the decades of successful use of 16 AWG copper conductors in fixture wire, motor wiring, control wiring, and other current-carrying applications as permitted in the NEC.		X			Revised
SR8287	310.21	XHWN was deleted in the 90C columns in Tables 310.16, 310.17 and 310.20 because this insulation type is not rated for use at 90C.		X			Revised
	<i>312</i>	<i>Cabinets, Cutout Boxes, and Meter Socket Enclosures</i>					
SR7525	312.1	CMP 9 accepts the principle of the Correlating Committee request (PC-842) to develop parallel language but disagrees that the revisions regarding screw penetrations of wiring spaces in Articles 312 and 314 are “equivalent,” and agrees with the rebuttal on this point in PC-1606.		X			Revised
FR7708	312.8(A)	If large conductors (4 AWG and up) are installed in these wiring spaces, the dimensions in 314.28(A)(2) should be applied. These enclosures do not differ in terms of minimum bending space concerns from comparable enclosures in Art. 314.		X			Revised
FR7820	312.10	CMP-9 is addressing the hazards involved in the insertion, blind or otherwise, of screws into enclosures within the scope of Art.		X			New section
FR7711	312.102	CMP-9 is inserting a rule that will assure that covers are provided.		X			New section
	<i>314</i>	<i>Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures</i>		X			
FR7821	314.5	CMP-9 is inserting language to protect against damage to conductors resulting from sharp projections from exposed threads of screws run through covers or sides of boxes.		X			New section
SR7527	314.5	CMP 9 accepts the principle of the Correlating Committee request (PC-843) to develop more parallel language, and uses PC-1249 to achieve that.		X			Revised
FR7726	314.16	CMP-9 is removing two superfluous references to “the provisions of” that do not add substance to the Code. Although the PI only refers to 314.16, CMP-9 is reviewing all such usage within Art. 312 and 314. CMP-9 is also correcting the structure of the Informational Note to comply with the Style Manual.		X			Revised
FR7727	314.16(A)(2)	CMP-9 is correcting an error in the top row only of Table 314.16(A), in the 8 AWG column, by reducing it from 5 conductors to 4 conductors.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7731	314.16(B)(2)	CMP-9 is deleting the second paragraph of 314.16(B)(2) because the product line it was intended to cover is not being produced for market.		X			Revised
FR7734	314.16(B)(5)	CMP-9 has decided to revisit the action taken in the comment period of the 1996 cycle, when the reference to equipment bonding jumpers was initially added (Comment 9-5). It was substantiated on the basis that these components can run within raceways. CMP-9 now concludes that any such application, if even possible, would constitute an extension of an equipment grounding conductor, and would be addressable as such.		X			Revised
FR7868	314.16(B)	CMP-9 is addressing the use of terminal blocks in outlet and device boxes. These are not commonly installed, but where provided, they take up enough volume to merit a conductor allowance.		X			Revised
FR7977	314.16(B)	CMP-9 is addressing the use of terminal blocks in outlet and device boxes. These are not commonly installed, but where provided, they take up enough volume to merit a conductor allowance.		X			Revised
SR7528	314.16(B)(5)	Equipment grounding conductors are only counted in box fill if they are part of a wiring entry to or exit from a box. A bonding jumper that never leaves the box is not counted, just as a short, energized wire connecting two devices in a box is not counted. CMP 9 is changing the word "in" to "entering" at the end of the paragraph so the rule will not be misapplied.		X			Revised
FR7738	314.17	CMP-9 is making editorial corrections and improvements to this section.		X			Revised
FR7749	314.23(H)(1)	CMP-9 is revising the language of this paragraph to correctly integrate the provisions of the applicable UL guide card requirements that apply to fittings that connect flexible cord to enclosures equipped with hubs.		X			Revised
FR7869	314.24	CMP-9 is adjusting the language by broadening the reach of this section to address side entries.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7870	314.24(C)	Address side entries. CMP-9 is aware of actual damage to conductors from installed devices or other equipment of sufficient size to create a conflict with entering conductors. For nominal 3 by 2 device boxes, any side entrance at the level of the device is a non-starter and will fail the new rule. For a 4-in. square box with two device yokes, either on internal gang mounts or the more usual case of a plaster ring (or raised cover), the rule gets interesting. The box interior will exceed the maximum device length by about 1 1/8 in, and therefore accommodate a top or bottom entry at either end. However, an entry at right angles to the yoke orientation (the standard gang spacing is 1 13/16 in.) would enter less than ¼-in. of available space to accommodate both a cable or raceway connection as well as wire manipulation.			X	\$3/box	Ensure adequate wiring space
FR7751	314.25	CMP-9 is inserting a requirement that conduit bodies must be covered after installation, and the covering options differ from those for boxes generally, as expressed in an added sentence on the topic.		X			Revised
FR7760	314.27(C)	CMP-9 is inserting a marking requirement on fan boxes on their interior so the suitability is evident during a rough inspection. This is consistent with the approach taken in 314.27(A)(1) and (A)(2). CMP-9 is also clarifying the wording of (2) to the effect that the access to framing is to be directly through the box, and not dependent of the box being removed for this purpose.		X			Revised
FR7761	314.27(E)	CMP-9 is updating the names for the existing terminology “locking support and mounting receptacles” and “attachment fitting” to correlate with newly defined terminology in Article 100, terminology that will include associated acronyms.		X			Revised
SR7535	314.27(E)	CMP 9 revised the text for clarity and added the informational note referencing ANSI/NEMA WD6 that provides users with relevant information for the standard configurations.		X			Revised
	315	<i>Medium Voltage Conductors, Cable, Cable Joints, and Cable Terminations</i>		X			
SRC065	315.1	The Correlating Committee advises that article scope statements are the responsibility of the Correlating Committee and the Correlating Committee accepts the panel action as revised. The revision is for correlation and consistency with NEC scope structure and to clarify the voltages that are covered. Second Revision No. 8260-NFPA 70-2021 [Section No. 315.1]		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
	330	<i>Metal-Clad Cable: Type MC</i>					
FR8407	330.10(A)	This revision will provide requirements for the installation of MC cable in damp locations to be the same as wet locations.		X			Revised
FR8411	330.30	Changing the word “provided” to “permitted in this Code” in this section provides consistency with section 320.30(B) and (C) . Providing the sentence -“Type MC cable fittings shall be used as a means of cable support” is more appropriately located in 330.30(A) as it applies to all sections. When establishing a measurement- the support at the box with the fitting is the starting point. This first revision relocates and revises the last sentence of 330.30(D) to the last sentence of 330.30(A).		X			Revised
FR8420	330.104	The minimum conductor sizes for copper and copper-clad aluminum are being reduced to 16 AWG copper and 14 AWG copper-clad aluminum.		X			Revised
	334	<i>Nonmetallic-Sheathed Cable: Types NM and NMC</i>		X			
FR8432	334.10	The allowance for detached garages was added since this was a similar construction and installation type. The informational note was revised to align with the Style Manual.		X			Revised
FR8434	334.10(B)	We agree with removal of “moist” and replacing with “wet”. UL 719 standard would need to be modified to be rated for wet locations.		X			Revised
FR8438	334.12	Nonmetallic-Sheathed Cable is to be protected and not subject to physical damage. NM cable is not suitable for direct burial and is therefore prohibited from being directly buried.		X			Revised
FR8439	334.15(B)	The change will provide consistency with other abrasion protection requirements when cable is installed in conduit or tubing.		X			Revised
FR8443	334.15(C)	The change will provide consistency with other abrasion protection requirements when cable is installed in conduit or tubing. Other changes were made to follow the NEC Style Manual 4.1.3 Reference Structure.		X			Revised
FR8481	334.19	This requirement was added to ensure protection of the insulated conductors when they enter any type of electrical component.		X			New section
FR8520	334.40(B)	The existing language already permits repairs in one-and-two family dwellings as it simply refers to “buildings.” The change would now allow for use of these listed devices in both existing and new buildings and is not limited to repair wiring.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8337	334.40(B)	An editorial change was made to 334.40(B). This change provided clarity and distinction by removing unnecessary words and changing the term “listed for the purpose” to “listed for use without a box”.		X			Revised
FR8521	334.80	A limitation was added to prohibit the use of the exception in 310.14(A)(2) and this will require all ungrounded and grounded conductors in thermal insulation (e.g. foam, caulk, etc.) to be considered current carrying for the purpose of ampacity adjustment. The removal of “the provisions of” is in accordance with the NEC style manual.			X	minimal	Fire safety
FR8435	334.104	The minimum conductor sizes for copper and copper-clad aluminum are being reduced to 16 AWG copper and 14 AWG copper-clad aluminum.		X			Revised
SR8437	334.104	The panel acted to revert to 2020 code language for the minimum size of conductors for 310.3(A), Tables 310.16 and 310.17, and wiring methods in multiple articles, including Articles 320, 330, 334, 336, and 340.		X			Revised
FR8437	334.112	The reference to Type NMS and NMS-B have been removed since these types no longer exist in Article 334.		X			Revised
	336	<i>Power and Control Tray Cable: Type TC</i>					
FR8524	336.10	The term “In” was changed to “For” for clarity and consistency. A list item (12) was added for permitted uses for Type TC-ER cable to correlate with 230.43 and 230.44. This will also initiate appropriate listing requirements to ensure that the cable is suitable for use as service conductors. The language was modified to clarify that the control conductors are being used for control circuits.		X			Revised
FR8613	336.104	Added allowance for 14 AWG Copper-Clad Aluminum and 16 AWG copper for grounded, ungrounded and equipment grounding conductors. First revisions are being made in other parts of the Code for correlation.		X			Revised
SR8443	336.104	The panel acted to revert to 2020 code language for the minimum size of conductors for 310.3(A), Tables 310.16 and 310.17, and wiring methods in multiple articles, including Articles 320, 330, 334, 336, and 340.		X			Revised
	337	<i>Type P Cable</i>					
SR8298	337	The Article title and cable type designation were changed to Industrial Mobile Cable and Type IM.		X			Revised
FR8614	337.1	Change the title of the Article 337 to “Drilling Rig Cable” The title and scope were revised to provide a name for this cable. Code Making Panel 6 refers this recommendation to the Correlating Committee for review.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8567	337.80	The reference to 310.14(B) was added to permit calculated ampacities for 18 AWG and 16 AWG conductors.		X			Revised
FR8568	337.108	Equipment grounding conductors are not required within a single conductor Type P cable. The text was revised to clarify that equipment grounding conductors are only required in multiconductor cables.		X			Revised
FR8570	337.115	Revisions were made to permit single conductor cables without an overall jacket for installation in enclosures or machinery, or larger conductors with increased insulation thickness. Additional requirements were established for these applications.		X			Revised
FR8572	337.116	Additional armor metal options were added to recognize industry practices.		X			Revised
	338	<i>Service-Entrance Cable: Types SE and USE</i>					
FR8605	338.24	The change in wording provides the minimal clarity for description pertaining to minor and major diameters per the axis of the flat cable. To be consistent with other Sections the language submitted should be the same and include the word “major” for clarity to using the diameter dimension to determine the radius of the bend. The change in wording provides the minimal clarity for description pertaining to minor and major diameters.		X			New Table
	340	<i>Underground Feeder and Branch-Circuit Cable: Type UF</i>					
SR8310	340.1	Language was added to provide clarity that when UF cable is installed as NM cable it does not have to meet the requirements of 334.12(B).		X			Revised
FR8608	340.24	The change in wording provides the minimal clarity for description pertaining to minor and major diameters per the axis of the flat cable. To be consistent with other Sections the language submitted should be the same and include the word “major” for clarity to using the diameter dimension to determine the radius of the bend. The change in wording provides the minimal clarity for description pertaining to minor and major diameters.		X			New Table
FR8606	340.104	The minimum conductor sizes for copper and copper-clad aluminum are being reduced to 16 AWG copper and 14 AWG copper-clad aluminum.		X			Revised
SR8446	340.104	The panel acted to revert to 2020 code language for the minimum size of conductors for 310.3(A), Tables 310.16 and 310.17, and wiring methods in multiple articles, including Articles 320, 330, 334, 336, and 340.		X			Revised
	342	<i>Intermediate Metal Conduit (IMC)</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8183	342	Table 4 Article 342 was revised to correlate with the trade sizes between IMC, RMC and EMT. It also correlates with the action taken on Public Comment 1209 for 342.20(B).		X			Revised
FR7582	342.10(B)	Additional text was added to 342.10(B) to clarify that IMC is permitted to be used in direct burial applications.		X			Revised
SR8144	342.20(B)	The panel accepted changes to include trade sizes 5 and 6 IMC to Article 342 to keep consistency in the rigid metal raceway articles. The panel found that due to the changes made in the first draft by FR7583 and the fact that the products are manufactured similarly that the addition of the new trade sizes are not considered new material.		X			Revised
FR7583	342.24	This First Revision combines Sections 342.24 and 342.26 into a single Section for clarity and usability and clarifies the total degrees of bends permitted to be used in a conduit run between pull points Response		X			Revised
FR7584	342.30(A)	Where securing for concealed work in finished buildings or prefinished walls is impracticable, EMT and flexible conduits are permitted to be fished. This same practice would be acceptable for IMC.		X			Revised
	<i>344</i>	<i>Rigid Metal Conduit (RMC)</i>					
FR7585	344.10(B)	Additional text was added to 344.10(B)(1) and 344.10(B)(2) to clarify that RMC is permitted to be used in direct burial applications. A comma was added after red brass RMC to make it clear that the uses permitted was not meant to apply to red brass elbows only.		X			Revised
FR7586	344.10(A)(2)	The requirements for supplementary corrosion protection are addressed under 344.10(B)(2) and should not be included under 344.10(A)(2) Response		X			Revised
FR7588	344.24	This First Revision combines Sections 344.24 and 344.26 into a single section for clarity and usability and clarifies the total degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
FR7589	344.28	Damage to the exterior coating of PVC coated conduit can create unsafe conditions. In order to prevent damage during threading and bending the manufacturer's instruction for clamping shall be followed		X			Revised
FR7590	344.30(A)	Where securing for concealed work in finished buildings or prefinished walls is impracticable, EMT and flexible conduits are permitted to be fished. This same practice would be acceptable for RMC		X			Revised
	<i>348</i>	<i>Flexible Metal Conduit (FMC)</i>					
FR7552	348.8	This First Revision adds a new Section 348.8 and clarifies that FMC cannot be reconditioned per NEMA CS100-2020.		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7553	348.24	This First Revision combines Sections 348.24 and 348.26 into a single Section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
FR7554	348.30(A)	This First Revision harmonizes the language with 350.30(A) and clarifies that Listed FMC Fittings are permitted as the means of securement and support for the exceptions.		X			Revised
	350	Liquidtight Flexible Metal Conduit (LFMC)					
FR7556	350.8	This First Revision adds a new Section 350.8 and clarifies that LFMC cannot be reconditioned per NEMA CS100-2020.		X			New section
FR7623	350.10	This First Revision removes the reference to 110.14(C) since it is not applicable to the temperature rating of the LFMC.		X			Revised
FR7558	350.24	This First Revision combines Sections 350.24 and 350.26 into a single Section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
	352	<i>Rigid Polyvinyl Chloride Conduit (PVC)</i>					
FR7559	352.1	This First Revision deletes the Informational Note in 352.1 since it is no longer needed. The Informational Note was useful when the nonmetallic conduits separated into individual Articles several cycles ago. The new Articles for different nonmetallic conduits are now well established. By deleting the Informational Note, 352.1 is now compliant with the 2020 NEC Style Manual, Section 4.1.4. Note to the Correlating Committee; A revision was made to the Scope of PVC Conduit.		X			Revised
FR7561	352.10(B)	This First Revision adds a new section 352.10(B) to clarify that PVC Conduit is permitted to be encased in concrete. Sections are renumbered accordingly Response		X			New section
FR7562	352.10(F)	This First Revision revises 352.10(F) for clarification and usability. This First Revision correlates with the new section 352.10(J) and 352.12(C).		X			New Table
FR7563	352.10(K)	This First Revision adds a new section 352.10(J) and informational note for clarification and usability. This new section makes it clear that Schedule 80 PVC Conduit and Schedule 80 PVC Conduit elbows are acceptable for areas of Physical Damage and that listed PVC Conduit fittings are used. This First Revision correlates with the sections 352.10(F) and 352.12(C).		X			New section
FR7567	352.12(C)	This First Revision revises 352.12(C) for clarification and usability. This First Revision correlates with the new section 352.10(J) and 352.10(F).		X			New Table

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7569	352.24	This First Revision combines Sections 352.24 and 352.26 into a single section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
FR7571	352.44	352.44 was revised to address earth movement, including frost heave, and the installation of expansion fittings and correlated to 300.5(D)(1).		X			Revised
FR7572	352.60	Section 352.60 was revised to clarify the equipment grounding conductor connection. Exception 1 and 2 were revised to harmonize the language used within other non-metallic raceway articles Response		X			Revised
	<i>353</i>	<i>High Density Polyethylene Conduit (HDPE Conduit)</i>					
FR7520	353.25	This First Revision combines Sections 353.24 and 353.26 into a single Section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
FR7537	353.48	Revise 353.48 to specify the permissible joining methods. Heat or butt fusion has been removed from the informational note because these joining methods result in an internal lip or bead formed on the conduit ID, which may 'burn' or damage the cabling when it is subsequently pulled into the raceway and over the lip. Furthermore, the lip will reduce the potential wire pull surface area and conduit fill calculations.		X			Revised
SR8133	353.48	UL 651A is performance based, if the CMP creates a laundry list of permitted joints, it may inadvertently omit a joining method that could meet the performance requirements of the standard. By prohibiting heat and butt fusion, that seems to meet the intent of the original PI as well as the intent of the current PC's.		X			Revised
FR7538	353.60	The second "equipment" was removed in the charging statement to clarify all types of grounding.		X			Revised
	<i>354</i>	<i>Nonmetallic Underground Conduit with Conductors (NUCC)</i>					
FR7539	354.10	Rigid nonmetallic conduit is no longer used in the reference tables. Table 300.5 now uses the term nonmetallic raceways and table 300.50 provides a list of the nonmetallic raceway, RTRC, PVC and HDPE.		X			Revised
FR7540	354.24	This First Revision combines Sections 354.24 and 354.26 into a single Section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a conduit run between pull points.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7541	354.60	The second “equipment” was removed in the charging statement to clarify all types of grounding. Exception 1 and 2 were added as they are permitted as a service entrance wiring method where separate equipment grounding conductors would not be necessary. This aligns 354.60 with 353.60.		X			Revised
	<i>355</i>	<i>Reinforced Thermosetting Resin Conduit (RTRC)</i>					
FR7542	355.1	This First Revision deletes the Informational Note in 355.1 since it is no longer needed. The Informational Note was useful when the nonmetallic conduits separated into individual Articles several cycles ago. The new Articles for different nonmetallic conduits are now well established. By deleting the Informational Note, 355.1 is now compliant with the 2020 NEC Style Manual, Section 4.1.4. Note to the Correlating Committee; A revision was made to the Scope of RTRC Conduit.		X			Revised
FR7545	355.24	This First Revision combines Sections 355.24 and 355.26 into a single Section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
	<i>356</i>	<i>Liquidtight Flexible Nonmetallic Conduit (LFNC)</i>					
FR7502	356.10	The phrase "shall be permitted" does not add clarity.		X			Revised
FR7535	356.24	This First Revision combines Sections 352.24 and 352.26 into a single Section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
	<i>358</i>	<i>Electrical Metallic Tubing (EMT)</i>					
FR7591	358.10(A)	List item 4 is added to clarify that EMT is permitted for direct burial applications.		X			Revised
FR7593	358.20(B)	A first revision was created to revise 358.20(B) to allow for larger diameter light weight listed metal tubing that is not being addressed in the current code.		X			Revised
FR7594	358.24	This First Revision combines Sections 358.24 and 358.26 into a single section for clarity and usability and clarifies the total degrees of bends permitted to be used in a conduit run between pull points.		X			Revised
	<i>362</i>	<i>Electrical Nonmetallic Tubing (ENT)</i>					
FR7548	362.8	This First Revision adds a new Section 362.8 and clarifies that ENT cannot be reconditioned per NEMA CS100-2020.		X			New section
FR7596	362.10	This First Revision separates 362.10(6) into two different sections, clarifies the requirements associated to the single section.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7549	362.24	This First Revision combines Sections 362.24 and 362.26 into a single section for clarity and usability and clarifies the number of degrees of bends permitted to be used in a tubing run between pull point.		X			Revised
FR7597	362.60	Section 362.60 was revised to clarify the equipment grounding conductor connection. Exception 1 and Exception 2 was added to harmonize the language used in other conduit Articles.		X			Revised
	366	<i>Auxiliary Gutters</i>					
FR7610	366.12	This first revision removes the distance related information in (2) to correlate with the uses permitted in 366.10. The informational note in 366.12 is removed as it does not improve usability or clarity of the associated requirement.		X			Revised
FR7609	366.10©	This first revision clarifies the uses permitted and associated exception for auxiliary gutters up to and over 30 ft. This revision does not change existing requirements, it only changes the structure of the requirement for improved clarity.		X			New section
	369	<i>Insulated Bus Pipe (IBP)/Tubular Covered Conductors (TCC) Systems</i>		X			
FR7620	369	This First Revision adds a new article to NFPA 70 to address the installation of Insulated Bus Pipe (IBP), also known as Tubular Covered Conductor (TCC).		X			New article
	370	<i>Cablebus</i>					
FR7612	370.10	This first revision aligns the language with other relevant Articles in Chapter 3. The term indoors is added to clarify that cablebus is permitted indoors as well as in the other uses listed. These changes will improve clarity and usability.		X			Revised
FR7613	370.18	This first revision simplifies the cablebus installation requirements and aligns the firestop requirements for Cablebus installation with the requirements for Cable Tray located in section 392.18(D). The requirements for a curb at floor penetrations in wet locations is removed as the Cablebus is suitable for wet locations and the associated curbing is a building code requirement.		X			Revised
FR7614	370.42	This first revision aligns the language with other relevant Articles in Chapter 3. The term dead ends is removed as it does not apply to cablebus installations. These changes will improve clarity and usability.		X			Revised
FR7616	370.120	This first revision clarifies that cablebus systems are provided with two types of markings: Nameplates at each terminating end and markings to identify the pieces of the cablebus system for installation purposes. This first		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		revision differentiates between the two types of markings.					
	371	<i>Flexible Bus Systems</i>					
FR7621	371	This First Revision creates a proposed new article for flexible bus systems.		X			New article
SR8156	371	This second revision clarifies in 371.14 and 371.18 that qualified design engineering supervision is needed for proper installation of flexible bus systems and that such installations must remain within the limitations of the listing and manufacturers installation instructions.		X			Revised
	374	<i>Cellular Metal Floor Raceways</i>					
FR7618	374.6	This change aligns the requirements with the ANSI Standard for Cellular Metal Floor Raceways & Fittings, UL 209 and clarifies that the construction, performance and marking requirements apply not only to raceway but also to the associated fittings.		X			Revised
	376	<i>Metal Wireways</i>					
FR7619	376.60	This change creates a new section permitting listed metal wireway to be used as an equipment grounding conductor. The new section title is consistent with other raceway articles and the language correlates with 250.118(13).		X			New section
	388	<i>Surface Nonmetallic Raceways</i>					
FR7655	388.60	This First Revision clarifies that the connection is to the equipment grounding conductor, not ground. Section 388.60 was revised to clarify the equipment grounding conductor connection.		X			Revised
	392	<i>Cable Trays</i>					
FR7573	392.10	Single insulated cables were added to correlate with 392.10(B)(1) and Public Input 589 Response		X			Revised
FR7574	392.10(A)	Table 392.10(A) was revised to correlate with the Article 800 and 805. Instrumentation tray cable: Type ITC was revised from 727 to 341 per the Task Groups recommendation. Note to the Correlating Committee: This revision needs to be confirmed that Article 727 was relocated to Article 341 Response		X			Revised
FR7575	392.10(B)(1)	Single insulated conductors were added to 392.10(B)(1) to correlate with 392.10.		X			Revised
SR8180	392.10(A)	References to Article 722 were added to Table 392.10(A) as an acceptable wiring method to be installed in Cable Tray. Instrumentation tray cables were relocated to Article 341 from 727. "Type" has been removed from the new definitions found in Article 100 for conduit and tubings. The reference to "Type" has been removed for the article in the purview of CMP-8.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7579	392.56	Type MV Cable Joints was added to 392.56 to correlate with Article 311. Note to the Correlating Committee: This revision needs to be confirmed with Article 311.		X			Revised
	393	<i>Low-Voltage Suspended Ceiling Power Distribution Systems</i>		X			
SR8191	393.6(B)	Section updated to align with the newly split Article 725.		X			Deleted article
	398	<i>Open Wiring on Insulators</i>					
SR8308	398.15(C)	HDPE was removed from line item (4) as a permitted means to provide physical protection for open wiring on insulators. This was done because 353.12 prohibits its use for exposed installations.		X			Revised
Chapter 4: Equipment for General Use							
FR8091	global	The term “branch” is being removed from the title to more accurately reflect that the Part addresses service, feeder, and branch-circuit conductors.		X			Revised
	400	<i>Flexible Cords and Flexible Cables</i>					
FR8475	400	The title to Part III was revised in order to accommodate adding a new Part IV.		X			Revised
FR8612	400.4	This change is found in the notes of the table. To address the need for data transfer in elevator installations an allowance for communications cable was added and the term data transfer was added to the note below the table.		X			Revised
SR8274	400.4	This change correlates with the second revision changes made in 620.12 by CMP-12. The smaller gauge wires are necessary to accommodate the additional communication requirements added to industry standards and some building codes for use with enhanced emergency communication systems for people with hearing loss. The AWG sizes were not changed in the table in order to avoid allowing smaller circuit conductors in applications other than communications.		X			Revised
FR8468	400.35	Addition of “latches” clarifies that it does not have to only “lock” together.		X			Deleted article
FR8465	400.40	A new Part is being added to address portable power feeder cables for voltages 2000 Volts and up. This will provide clear guidance in using flexible cords above 2000 volts.		X			New section
	402	<i>Fixture Wires</i>					
FR8478	402.2	A reference to Part VI of article 410 was added to the informational note since it is more specific to wiring luminaires.		X			Revised
	404	<i>Switches</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7551	404.1	An informational note is added to reference Section 210.70 as it has information on wireless devices. There is no need to reference connection to building wiring since it specifically indicates the scope does not apply to wireless control equipment to which circuit conductors are not connected. Refer this information to CMP 2 and task group for wireless control.		X			Revised
FR7883	404.2(C)	CMP-9 is not removing the occupancy limitation because that represents the principal application of the rule. CMP-9 removed the allowance that the grounded conductor would not be required to be installed at a lighting switch location where the box enclosing the switch is accessible for the installation of an additional or replacement cable without removing finish materials. Although the box may be accessible, the ease of installation of the grounded conductor after the initial installation is likely to be exceedingly more difficult than during the initial installation. CMP-9 deletes the delayed implementation date in the exception and the word "future" in the Informational Note.			X	\$ 11	Future lighting controls
SR7858	404.2(C)	CMP 1 has a first revision (FR-9576) and pending public comment (PC-1706) to expand the wording of the occupiable space definition so it will accurately correlate with building code definitions. If this is not changed, then the building code reference here can be removed.		X			Revised
SR7566	404.3	CMP 9 changed the text to improve clarity of the requirement.		X			Revised
SR7562	404.11	CMP 9 added explanatory text in the note regarding the purpose of the referenced code sections.		X			Revised
FR7881	404.14	The UL standard and associated guide information under category code WJQR for snap switches with push in terminals permits only 14 AWG solid copper conductors to be used at this time. "Screwless terminal connectors of the conductor push-in type (also known as "push-in terminals") are restricted to 15 A branch circuits and are intended for connection with 14 AWG solid copper wire only.		X			Revised
SR7859	404.14(D)	CMP 9 made the change for the following reasons: -To bring into the Code that wiring devices rated 15 and 20 amperes are suitable for installation with copper and copper-clad aluminum as provided in the UL guide information.		X			Revised
FR7859	404.16	Lighting dimmer and electronic control switches are constructed using specialized materials, parts and		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		techniques that are specified by the original equipment manufacturer.					
FR8035	404.22	CMP-9 removes the effective date of January 1, 2020 as it has passed.		X			Revised
FR7861	404.30	Switches of this type may allow access to live parts with the door open that the user may contact. This change will restrict access to qualified persons.		X			New section
	406	<i>Receptacles, Cord Connectors, and Attachment Plugs (Caps)</i>					
SRC091	406.2	The Correlating Committee relocates the second sentence in 406.3(A) and the second sentence in 406.7 to new section 406.2 reconditioned equipment for consistency and usability of the code.		X			Revised
FR7601	406.3(D)	Receptacles for copper-clad aluminum conductors has been modified to reflect the addition of copper-clad aluminum as it relates to a receptacle terminal construction. This wording supports the direction of the NFPA Standards Council in their Decisions D#19-2 and D#19-23. Note: Reidentify existing 406.3(D), (E) and (F).		X			New section
FR7602	406.3(C)	The wording improves the identification of a “CO/ALR receptacle” and is consistent with 404.14(C). First level subdivision was revised to comply with Section 3.2.3 of the 2020 NEC Style Manual.		X			Revised
FR7603	406.3(H)	Receptacles terminals have not been listed, evaluated or tested to provide this method of electrical connection.		X			New section
SR8137	406.3(D)	CMP 18 made the change for the following reasons: Receptacles (wiring devices) rated 15 and 20 amperes are suitable for installation with copper and copper-clad aluminum as identified in the UL RTRT guide information.		X			Revised
SRC013	406.3(D)	As written, the sentence implies that screwless terminal receptacles are the only receptacle type permitted on 15 A branch circuits. Similar wording, which addresses this issue appears in Section 404.14(D) for switches. Text for 406 is revised for clarity and to align with text in 404.14. Second Revision No. 8137-NFPA 70-2021 [Section No. 406.3(D)]		X			Revised
SRC089	406.3(A)	The Correlating Committee relocates the second sentence in 406.3(A) and the second sentence in 406.7 to new section 406.2 reconditioned equipment for consistency and usability of the code. Second Revision No. 8162-NFPA 70-2021 [Section No. 406.3(A)]		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
FR7570	406.4(D)(8)	“(GFPE)” in the title was added for clarity and to differentiate from 406.4(D) (3). This requirement is very similar to (3) of this section initiating providing the GFPE protection when modifications are made. Areas such as marinas where GFPE protection has been recently expanded must be afforded protection as the system ages and modifications are made per 2020 NEC Style Manual. 3.2.3 Response		X				New section
FR7599	406.4(D)(5)	Tamper-Resistant (TR) “CO/ALR” receptacle construction is not available. Consequently, the suggested change addresses where replacements are made at the receptacle outlet when a receptacle directly connected to aluminum branch-circuit conductors using a CO/ALR receptacle.		X				Revised
FR7667	406.4(G)	CMP-18 adds new 406.4(G) to additionally apply use of floor receptacles in dry locations. The change to include GFCI protection to all 125-volt,15- and 20- ampere floor receptacles is applicable to food service areas and areas where liquids spillage may be present.			X	\$ 50		Protection of floor receptacles
SR8147	406.4(G)	The term “standpipes” has been removed and changed to “physical protection” to better clarify the intent and specific need of physically protecting the floor receptacle from damage by floor-cleaning equipment. “Places awaiting transportation” has been replaced by the term “passenger transportation facilities” to identify what is meant by places awaiting transportation. These locations include not just the food court but the waiting spaces in these locations. The addition of GFCI protection of all 125-volt, single-phase, 15- and 20-ampere floor receptacles installed in specified locations is intended to provide public protection against potential electric shock due to accidental spillage of refreshments.		X				Revised
SR8372	406.4(D)(5)	“Replace with another CO/ALR receptacle” was removed and “installed as replacement” was added for clarity. Format was changed to tabulation for clarity.		X				Revised
FR7564	406.6(D)	A faceplate that requires power to operate must be connected to the branch circuit in a code compliant manner. Receptacles have not been listed, evaluated or tested to provide a friction or spring contact method of electrical connection to its terminals.		X				Revised
SR8143	406.6(D)	The phrase “listed for the purpose” does not provide clear direction as to the objective of the listing.		X				Revised
SRC090	406.7	The Correlating Committee relocates the second sentence in 406.3(A) and the second sentence in 406.7 to new section 406.2 reconditioned equipment for		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		consistency and usability of the code. Second Revision No. 8163-NFPA 70-2021 [Section No. 406.7]					
FR7578	406.9(C)	CMP-18 adds Exception 3 to address weight supporting ceiling receptacles (WSCR) installed for listed luminaires that employ a weight supporting attachment fitting (WSAF) in damp locations.		X			Revised
FR7598	406.9	Receptacles other than 15- and 20-ampere, 125- and 250-volt rated are commonly installed in close-proximity and exposed to the same, and in many cases even more severe, environmental influences. Over-heating caused by corroded/compromised current path will be more severe due to the higher current drawn from these receptacles. Requiring these receptacles to be weather-resistant will result in improved safety for the users of these devices. The hinged cover opening was added to verify installation. degrees from the closed to open position, after installation.			X	\$ 30	Safety
SR8150	406.9	Both 406.9(A) Damp locations and 406.9(B) Wet locations were modified to require hinged covers of outlet box hoods to fully open if the cover is not designed to open 90 degrees, from the closed to open position, after installation. Additionally, the term "extra – duty" and "Extra duty" were replaced with extra duty (no quotes or dash between extra-duty) in 406.9(B) and Informational Note No.1.		X			Revised
SR8152	406.9(C)	It is quite common for a toilet to be located next to a bathtub or shower in a residential bathroom.		X			Revised
FR7664	406.12	CMP-18 added item 10 as children of all ages have access to these areas. EX: Barns, Petting Zoos, Stables and Buildings at Pumpkin Patches where receptacles may be installed with access.		X			New item
FR7669	406.12(8)	CMP-18 revises living care facilities to include residential care. Foster care, nursing homes and psychiatric hospitals are added. The informational notes are revised to comply with the NEC Style Manual.		X			Revised
	<i>408</i>	<i>Switchboards, Switchgear, and Panelboards</i>					
FR7895	408.4	The removal of the word field is needed as it will assist the electrical plans examiner. The NEC is an enforcement document; this change will improve electrical Code enforcement at the plan review stage. There is no reason to limit the scope of this provision solely to "the field."		X			Revised
SR7583	408.8	The changes separate the requirements for replacement panelboards, which are now located in a new Section 408.9, from the requirements for reconditioning in Section 408.8.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SRC078	408.8	The Correlating Committee relocates section 408.8 to 408.2 for consistency and usability of the code. Committee Comment No. 7583-NFPA 70-2021 [Section No. 408.8]		X			Revised
FR7950	408.38	CMP-9 is also adding an evaluation requirement on systems with fault currents above 10,000 amperes to the general provisions in 408.38.		X			Revised
FR7944	408.43	This change in the 2020 NEC revision cycle addressing the installation of a panelboard in a face-up position is necessary.		X			Revised
	<i>409</i>	<i>Industrial Control Panels</i>					
SR7662	409.3	Table 409.3 is removed because the information is redundant to the requirements of 90.3. The first sentence of clause 409.3 is revised to delete the reference to Table 409.3.		X			Revised
SR7664	409.6	The section is revised to clarify requirements for grounding and requirements for bonding of multi-section industrial control panels.		X			Revised
SR7742	409.11	The FR was modified to include markings that should be identified on the outside of the industrial control panel while allowing some items to be identified on the inside.		X			Revised
SR7778	409.21(A)	The panel created this SR in response to PC-1394 which was provided to CMP-11 for informational purposes. Reference to part IX of 240 was removed and it is not necessary because the scope of Article 409 is limited to 1000 V or less.		X			Revised
FR8056	409.60	Section 409.60 (including the title) is revised to reflect the intent that sections of industrial control panels be bonded together.		X			Revised
FR8053	409.70	This first revision to require surge protective devices addresses a documented safety issue that has been reported by the Electrical Safety Foundation. This language provides consistency with requirements for industrial machinery in Article 670.			X	\$ 100	Surge protection
FR8058	409.110	The requirements in 409.110 are being revised such that the marking be done with a permanent nameplate of sufficient durability for the environment and not be handwritten, to be consistent with other areas of the code.		X			Revised
	<i>410</i>	<i>Luminaires, Lampholders, and Lamps</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7504	410.7	Lighting ballasts, LED drivers, and lamps are constructed using specialized materials, parts and techniques that are specified by the original equipment manufacturer. If these factors are not properly considered during reconditioning, important safety features may not function properly. Additionally, if proper materials, parts, or equipment are not used, the integrity of reconditioned devices may not be assured, and reliability or function may be compromised.		X			Revised
SRC079	410.7	The Correlating Committee relocates section 410.7 to 410.2 for consistency and usability of the code. SR-8164-NFPA 70-2021		X			Revised
FR7505	410.10(D)(1)	Paddle fans without luminaires (light kits) are not in the scope of Article 410. Luminaires (light kits) are added to the paddle fan description to clearly indicate that they are not allowed in the zone.		X			Revised
FR7656	410.10(F)	Any roof can have the metal or shingles replaced. Roofers miss trusses or rafters when nailing/screwing plywood or OSB sheeting and could puncture luminaires. The qualifier of “where subject to physical damage” is added to any condition that would protect the luminaire installation from damage due to roof fasteners including concrete slabs.			X	varies	Protection from nails
SR8165	410.10(F)	This exception was added to recognize the additional protection provided by a concrete slab and to correlate with the allowance coming into 300.4(E).		X			Revised
FR7617	410.42	Section 410.42 was rewritten to clarify the requirement. It was divided into two subdivisions. Section 410.42(B) was structured in a list format for the three conditions when an exposed conductive part is not required to be connected to an equipment grounding conductor to comply with the NEC Style Manual.		X			Revised
SR8170	410.42	Language was changed to use appropriate Article 100 definition of Exposed Conductive Surfaces that eliminates the need to use the phrase “unqualified persons”. Changed to exception format for clarity.		X			Revised
SR8171	410.44	Reference to 250.118 was reintroduced because it provides alternative mechanical connections to a wire-type equipment grounding conductor.		X			Revised
FR7544	410.46	Section 410.46 is being deleted because the requirement has been incorporated into 410.44. CMP-18 requests the CC to review Table 250.3 which makes reference to 410.46.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7657	410.62(C)(1)	There are luminaries on the market promoted for mobility and flexibility that are to be daisy changed together. The panel has noted installations where the luminaire is not located below an outlet and cases where the flexible cord is being supported by the building structure. Adding an informational note, referencing 400.10 and 400.12 will reinforce acceptable uses of flexible cord.		X			Revised
FR7531	410.69	CMP-18 deletes the effective date of Jan 1, 2022.		X			Revised
FR7640	410.71	The original requirement was added in response to an accident involving a double ended lamp fluorescent ballast replacement.		X			New section
FR7658	410.130(G)	Because LED drivers were added to the requirement it was no longer appropriate for this requirement to be in Part XII "Special Provisions for Electric-Discharge Lighting Systems of 1000 volts or Less"; therefore 410.130(G) was moved to Part VI "Wiring of Luminaires" and renumbered as 410.71.		X			Revised
FR7526	410.184	Luminaires with "hard-wired" flexible cord connection, such as adjustable floodlight luminaires installed in compliance with 410.62 (B), are not required to be provided with GFCI protection.		X			Revised
FR7528	410.190	Germicidal radiation has been used to disinfect air, water, and surfaces for many years.		X			Listing
	<i>411</i>	<i>Low-Voltage Lighting</i>					
FR7646	411.1	Section 411.1 is revised to remove what could have been considered a conflicting requirement. An exception was added for clarity. The informational note was revised to comply with the NEC Style Manual. CMP-18 realizes that the scope is under the purview of the Correlating Committee. CMP-18 requests the CC review the change.		X			Revised
SRC085	411.2	The Correlating Committee relocates the requirement on reconditioned equipment from 411.5 to 411.2 for consistency with other articles in the Code.		X			Revised
FR7647	411.4(A)	The listing requirement is updated to clarify the intent of the listing. The redundancy of bare conductors is removed.		X			Revised
SR8202	411.4	The text in 411.4 "permitted to be" was deleted for clarity and ease of use.		X			Revised
FR7652	411.6(A)	An exception is added for a Class 2 system. A secondary grounding prohibition is not necessary or appropriate for Class 2 power sources. CMP-18 notes to the Correlating Committee that this change potentially conflicts with 250.22(4), which is addressed by PI-1040.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8182	411.6	The exception only applies to Class 2 power sources that are listed and identified for secondary grounding. The second revision was made to ensure that power sources are identified for secondary grounding when they have been evaluated and found suitable for that application. The reference to 725.60 was removed due to redundancy.		X			Revised
	<i>422</i>	<i>Appliances</i>					
FR8308	422.4	Section 422.6 requires all appliances supplied by 50 volts or more to be listed. The requirement in 422.4 to evaluate the exposure to live parts was deleted because it is covered by the listing process.		X			Revised
FR8316	422.5(A)	Ground-fault circuit-interrupter (GFCI) protection is defined in Article 100 which includes a reference to Class A protection for personnel. Response for FR: CMP 17 requests that the Correlating Committee review the use of the various classes of ground fault protection and provide guidance back to the panels.		X			Revised
FR8397	422.5(A)	Drinking water fountains have been added to the list as they are similar to drinking water coolers and should be afforded the same GFCI protection.		X			Revised
FR8352	422.15	Section 422.15 was deleted because the requirements contained in it are not unique to central vacuum outlet assemblies. This section simply references requirements that apply generally and Section 90.3, Code Arrangement states that Chapters 1-4 apply generally.		X			Deleted section
FR8376	422.16(B)	Section 422.16(B) was revised to comply with the NEC Style Manual requirements for lists.		X			Revised
SR8315	422.16(B)(2)	An informational note would not be appropriate, because it would not be enforceable. However, the panel sees a need to recognize a smoothed edge in the body of the code.		X			Revised
SR8353	422.18	The panel has reorganized this section to create (A) entitled "support", using the existing language and to add (B) entitled "location" to accommodate a need to address requirements for ceiling (paddle) fans in bathrooms located near tub or shower spaces.		X			Revised
FR8387	422.23	This text was removed as it is redundant. The allowance for special permission, which is defined in Article 100, is in 90.3. It is unnecessary to repeat it here. In addition, appliances supplied by 50 volts or higher are required to be listed and 110.3(B) points to the installation instructions of the listing.		X			Deleted section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8393	422.41	To improve clarity and usability the text “while in the “on” or “off” position” has been deleted. Additionally, product safety standards such as UL 859 and UL 1431 require that this protection be provided in both the “on and off” positions, and Section 422.6 requires all appliances over 50v to be listed, so this requirement does not need to be repeated in the NEC.		X			Revised
FR8394	422.46	Section 422.46 was deleted.		X			Deleted section
FR8396	422.50	Section 422.6 requires all appliances supplied by 50 volts or higher to be listed, therefore this section is redundant.		X			Deleted section
	<i>424</i>	<i>Fixed Electric Space-Heating Equipment</i>					
FR8721	424.3	A reference to new Table 424.3 is added in the charging paragraph.		X			Revised
FR8649	424.10	Section 424.10 was removed as it is redundant. The allowance for special permission, which is defined in Article 100, is in Section 90.4. Section 424.9 is renumbered as Section 424.10 to comply with NEC Style Manual Section 2.4.2.1.		X			Revised
FR8619	424.41(A)	Cables identified for ceiling installations are specified to distinguish from cables permitted in the wall in accordance with new Section 424.48.		X			Revised
FR8618	424.48	To address new applications of this heating technology, Section 424.48 is being added to allow for and provide requirements for installation of heating cables in, on, or behind walls.		X			New section
SR8354	424.48	Item 2 is removed as 110.3(B) already requires the equipment to be installed per the manufacturer’s instructions and 424.6 requires the equipment to be listed. The exception is deleted because existing code text in 424.103(C) already indicates GFCI protection is not required for low-voltage space heating equipment.		X			Revised
FR8621	424.66	The revised language will provide specific guidance to industry and improve clarity to users of the code. Additionally, “sufficient clearance” is vague an unenforceable which does not comply with Section 3.2.1 of the NEC Style Manual. The informational note has been revised to remove the standard’s edition year to comply with the NEC Style Manual Section 4.2.1.2 Response		X			Revised
FR8638	424.92(A)	Clarify intent as "panel finish" may be interpreted as "panel finish coat" (ie; paint or similar coating), or as "panel trim cover." If "panel finish coat", then the text may be interpreted that the markings may be permitted to be painted over, or otherwise obscured after marking is made by some finish coating.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8692	424.93	To address new applications of this heating technology, Section 424.93(C) is being added to allow for and provide requirements for installation of heating panels in, on, or behind walls.		X			Revised
FR8693	424.93(A)(2)	To address new applications of this heating technology, reference to new Section 424.93(C) is being added to allow for and provide requirements for installation of heating panels in, on, or behind walls.		X			Revised
	425	<i>Fixed Resistance and Electrode Industrial Process Heating Equipment</i>					
FR8650	425.1	The references in Section 425.1 to other articles were deleted. References to articles that do not apply to equipment covered under Article 425 are not necessary.		X			Revised
SRC063	425.2	The section is re-numbered to 425.3 to achieve parallel numbering with other Chapter 4 articles for correlation. The reference to all parts of Article 430 is removed as it is redundant. Second Revision No. 8355-NFPA 70-2021 [Section No. 425.2]		X			Revised
FR8651	425.10	Section 425.10 was removed as it is redundant. The allowance for special permission, which is defined in Article 100, is in Section 90.4. Section 425.8 is renumbered as Section 425.10 to comply with NEC Style Manual Section 2.4.2.1.		X			Revised
	426	<i>Fixed Outdoor Electric Deicing and Snow-Melting Equipment</i>					
FR8685	426.14	Section 426.16 was removed as it is redundant. The allowance for special permission, which is defined in Article 100, is in Section 90.4.		X			Deleted section
FR8674	426.28	The text has been revised to allow the ground fault trip level to be specified by the manufacturer.		X			Revised
	430	<i>Motors, Motor Circuits, and Controllers</i>					
FR7986	430.6	The committee revised the section into a list format to improve the clarity and usability. The Panel has added an additional section (2)(C) to include information on motors of such size that their ampacities are outside what is included in the tables found in Part XIV. Changes were made from “controller” to “motor controller” and revised the informational notes to align with the global PI request to make complete sentences.		X			Revised
SR7802	430.6	Changes made in the SR to respond to CC concerns on ampere and readability. Section 430.221 clarifies that Parts V-VII do cover MV applications unless modified or amended by this section.		X			Revised
SRC003	430.6	List items in 430.6(A)(1), Exception Nos. (2) and (3) refer to specific devices. List item 4 refers to a type of		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		protection rather than a specific device. To address this oversight, the term “protection” is changed to “protective devices” in list item 4 in exceptions (2) and (3). Second Revision No. 7802-NFPA 70-2021 [Section No. 430.6]						
FR8031	430.7(A)	Revisions made to add motor design letter A to the nameplate to increase the information to the user. Informational note revised to reference the most current revision of NEMA MG1 and the withdrawal of IEEE 100 since it is no longer active.		X				Revised
FR7988	430.8	The change proposed for the marking is an installation comment and does not belong in this section. The addition of “current” to the exceptions correlates with the defined term in Article 100.		X				Revised
SR7538	430.11	Updates included to address CC concerns on use of ampacity vs current. Changes made to better address Design A motor LRC calculations.		X				Revised
FR8009	430.52(C)	Updating the language of this section to include Design B premium efficiency motors will improve usability since these motors are being installed today per government regulations. The change provided improves usability of the code. The controller definition has been updated changing “controller” to “motor controller.” Response		X				Revised
SR7805	430.53	requirements and requirements to expand exceptions in list form. References to parts of article 240 were kept to provide clarity.		X				Revised
FR8013	430.61	This FR corrects the terminology used to make it correctly state “ground-faults”. Revisions are made for compliance with Section 4.1.4 of the NEC Style Manual.		X				Revised
SR7533	430.62(A)	PC reviewed per CC direction and changes were made to improve clarity and readability.		X				Revised
SR7574	430.72(C)(1)	Changes made to update the proper section pointers per cc direction in the global PC-1961.		X				Revised
FR8033	430.81	The controller definition has been updated changing “controller” to “motor controller.” Response		X				Revised
FR8034	430.83	This PI is related to PI 393.		X				Revised
FR8024	430.84	The controller definition has been updated changing “controller” to “motor controller.” Response		X				Revised
SR7536	430.97(C)	Removal of the limitation of 312.6 (B) to 312.6 will improve usability of this section.						Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8039	430.110	Improving the information available to properly apply Design A motors will improve the usability of the code. Information on the calculation proposed needs more detail and substantiation to be accepted. The controller definition has been updated changing “controller” to “motor controller.” Revisions are made for compliance with Section 2.4.3 of the NEC Style Manual.		X			Revised
FR8040	430.113	The changes will improve safety by indicating on the warning sign specifically where the different energy sources are located. Revisions are made for compliance with Section 4.1.4 of the NEC Style Manual. The controller definition has been updated changing “controller” to “motor controller.” Response		X			Revised
FR8122	430.120	This FR will include MV VFD’s in a section where information is not provided for this product.		X			Revised
FR8044	430.204	The FR adds requirements for minimum bending space of conductors for enclosures of equipment operating over 1000V Response		X			New part
SR7555	430.205	Changes made to improve clarity of this section. Also changes made to titles on SR-7559 in Tables 430.249 and 430.250 to include 2300V motors made improve correlation.		X			Revised
SR7565	430.208	Medium voltage disconnecting means for motor controllers and adjustable speed drives are already rated at 100%. It is not necessary to rate these to 115% of the full load current rating of the motor. Note: SR-7569 also modifies this section.		X			Revised
SR7569	430.208	The cc comments on ampere vs current ratings are addressed. The change of FLC sizing percentage is not changed based on technical review.		X			Revised
FR8045	430.224	The panel is providing the addition of MV VFD information and is an important update to the code. The addition of requirements on sizing conductors for the input of MV VFD’s is needed.		X			Revised
FR8046	430.225	The panel is providing the addition of MV VFD information, it is an important update to the code. The addition will improve usability of this section.		X			Revised
FR8048	430.232	The controller definition has been updated changing “controller” to “motor controller.” Revisions are made for compliance with Section 4.1.4 of the NEC Style Manual.		X			Revised
SR7570	430.241	Changes made to improve clarity and utilize defined term of Voltage to Ground.		X			Revised
FR8050	430.243	The controller definition has been updated changing “controller” to “motor controller.” Revisions are made for compliance with Section 4.1.4 of the NEC Style Manual.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
	<i>440</i>	<i>Air-Conditioning and Refrigerating Equipment</i>					
SR7600	440.3	Table 440.3(D) is not necessary because it is redundant to Article 90. Further, without reference to Table 440.3(D) the rest of 440.3 is not necessary. PC-134 &135 are rejected as this SR deletes 440.3.		X			Revised
FR8130	440.8	As split-mini units become more prevalent in installation, they are being installed in bathtub and shower spaces due to lack of wall space. This can present a hazard. This first revision revises 440.8 to include location and prohibits installation of these units in the zone around bathtub and shower spaces. The dimensions of the zone around these areas are consistent with other Articles in the Code.		X			Revised
FR8063	440.11	The first revision will enhance the protection of unqualified persons in the vicinity of this equipment. Section 440.14 already addresses location.		X			Revised
FR8078	440.14	A reference to 110.26(A) is being added to the normative text of 440.14 to emphasize the importance of complying with 110.26(A) when locating HVAC disconnecting means. This subsequently will eliminate the need for informative note 2.		X			Revised
FR8088	440.62	The term “current” is being added before “rating” to clarify that the rating is the current rating.		X			Revised
	<i>445</i>	<i>Generators</i>					
FR8975	445.4	It is a normal practice for generators to be reconditioned.		X			Revised
SR8050	445.4	Article 445 is for generators, also called gensets. Although portions of stationary gensets may be reconditioned, manufacturers typically do not publish instructions for reconditioning a complete genset.		X			Revised
FR8981	445.6	This revision deletes voltage limitation to conform with the listing requirement in UL 2200, Edition 3 to recognize higher voltages. Deleting “by a field evaluation body” as it is unnecessary. Information note has been revised to conform with the Style Manual 3.1.3.1 and 4.1.3 Response		X			Revised
FR8991	445.11	2360) The revision clarifies that equipment cannot be mounted where it would conceal or obscure the nameplate. (2555) The revision clarifies the equipment ratings and adds additional information that is important for compliant installations.		X			Revised
SR8051	445.11	The list of examples in (2) is not all inclusive and has been modified accordingly. The final sentence has been removed in favor of adding “accessible” to the first sentence, to provide clarity on the location of the nameplate and to use a defined term.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9028	445.18	This revision creates a new section to separate the generator emergency shutdown and disconnect requirements for clarity.		X			New section
SR8052	445.19(B)	The revision improves clarity and meets the intent of the submitter.		X			Revised
	<i>450</i>	<i>Transformers and Transformer Vaults (Including Secondary Ties)</i>					
SR7862	450.2	Section 450.2 was not really a definition of a transformer, even though Section 450.2 was titled as such.		X			New section
FR7787	450.3	Informational Note 2 is revised to include reference to IEEE standard.		X			Revised
	<i>460</i>	<i>Capacitors</i>					
SR7504	430.2	PC-938 Response: The language provided creates confusion in how the rebuilt motors should be inspected.		X			New section
FR8111	460.24(A)	It is being clarified that group-operated switches be evaluated for switching a capacitive load because switching of capacitor banks can generate recovery voltages of two to three times the rated system voltage and can lead to restrikes and continued flow, which can result in ruptured capacitors, external equipment flashovers, failure of overvoltage device, and damage to the switching device contacts.		X			Revised
SR7717	460.24(B)(2)	The reference to 490.22 in 460.24(B)(2) is revised to 495.22 due to the change in location of the requirement in response to Global PC-460 and Global PC-1963.		X			Revised
	<i>470</i>	<i>Resistors and Reactors</i>					
SRC162	470	Section 470.2 is revised for clarity, and to remove requirements redundant to those in 110.20. Committee Comment No. 7591-NFPA 70-2021 [Article 470]		X			Revised
FR8136	470.5	New section 470.5 is being added to address reconditioning of resistor and reactors. Resistors are not permitted to be reconditioned because the reconditioning requires welds to be broken and replaced and ceramic spacers (and other components) to be inspected by a qualified individual. Reconditioning of reactors may be done but only at the discretion of the manufacturer.		X			New section
FR8138	470.21	New section 470.21 is being added to address reconditioning of resistor and reactors. Resistors are not permitted to be reconditioned because the reconditioning requires welds to be broken and replaced and ceramic spacers (and other components) to be inspected by a qualified individuals. Reconditioning of		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		reactors may be done but only at the discretion of the manufacturer.					
	480	<i>Stationary Standby Batteries</i>					
FR9029	480	The title of the article is changed from “Storage Batteries” to “Stationary Standby Batteries.” This change in title provides a more accurate identification of what is covered by Article 480.		X			Revised
FR9617	480	The Informational Note is deleted as it is no longer necessary due to the changes in the scope of Article 480 which clarify that Article 480 only applies to lead-acid or nickelcadmium cells. The title of Part V is changed from "Flow Battery Energy Storage Systems" to "Flow Battery ESSs" to use the acronym "ESS" for "Energy Storage System." Response		X			Revised
FR9030	480.1	The scope has been updated to be consistent with the title change (made in TG4-1) and further limit the scope of this article to lead-acid and nickel-cadmium cells. A new Informational Note No. 1 is added to reference Article 706 for installations of batteries that do not fall within the scope of Article 480. The reference to NFPA 855 has been added to the Informational Note		X			Revised
SR8104	480.1	The scope of Article 480 and the informational note were revised to remove the limitation of application to solely lead-acid or nickel-cadmium battery chemistries in accordance with the Correlating Committee direction in CN 290.		X			Revised
FR9068	480.10(E)	Doors must be able to open at least 90 degrees in order for personnel to escape danger in an emergency situation such as an electrical explosion or arc flash event.		X			Revised
	490	<i>Equipment Over 1000 Volts Nominal</i>					0
FR7970	490	The use of larger resistance type boilers is becoming more prevalent as users move to de-carbonization and away from fossil fuels for heating.		X			Revised
SR7686	490	CMP 9 created a new Article 495 which covers the scope of Article 490. Changes made to Article 490 have been incorporated into the new Article 495, and the entire content of Article 490 can now be deleted.		X			Revised
FR8279	490.2	The term “Medium Voltage” is commonly used to describe circuits and equipment operating at voltage levels greater than 1000 volts, and up to 52 kV.		X			Revised
FR7960	490.3(A)	In accordance with Clause 4.1.4 of the NEC Style Manual, the reference to the entire Article 450 is removed. There is no need in referencing “transformers” in a Section that		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		references other oil filled equipment. The revised text improves clarity.					
FR7971	490.71	The use of larger resistance type boilers is becoming more prevalent as users move to de-carbonization and away from fossil fuels for heating.		X			Revised
FR7972	490.72(E)	The use of larger resistance type boilers is becoming more prevalent as users move to de-carbonization and away from fossil fuels for heating.		X			Revised
FR7973	490.73	The use of larger resistance type boilers is becoming more prevalent as users move to de-carbonization and away from fossil fuels for heating.		X			Revised
	495	<i>Equipment Over 1000 Volts ac, 1500 Volts dc, Nominal</i>					
FR7941	495	Revised Article 495 based on the actions and substantiation of the Medium Voltage Task Group.		X			New article
SR7755	495.2	This revision addresses comments in Correlating Committee Note No.		X			Revised
SRC084	495.2	The Correlating Committee added general requirements for reconditioned equipment in 495.2 to provide consistency and improve usability of the code. Users looking for information on reconditioned equipment will start at the general requirement and then look within the article for adjustments for specific equipment types. Section 495.49 was not relocated based on the location within Part III and applying specifically to switchgear.		X			New section
SR7752	495.49	Section 110.21 requires the original listing mark be removed.		X			Revised
SRC083	495.49	The Correlating Committee added general requirements for reconditioned equipment in 495.2 to provide consistency and improve usability of the code. Users looking for information on reconditioned equipment will start at the general requirement and then look within the article for adjustments for specific equipment types. Section 495.49 was not relocated based on the location within Part III and applying specifically to switchgear. Committee Comment No. 7752-NFPA 70-2021 [Section No. 495.49]		X			Revised
Chapter 5: Special Occupancies							
SR7522	global	CMP-14 requests NFPA staff to remove dates from referenced standards in the informational notes in Articles 500-516 except where the date is associated with a standard from which text has been extracted. The removal of reference standard dates alleviates the need for unnecessary changes to the Code each cycle.		X			Revised
	500	<i>Hazardous (Classified) Locations, Classes I, II, and III, Divisions</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7501	500.1	(1) The Scope is reorganized to follow the format of 90.2 and to make it clear what is covered in the article and what is not covered.		X			Revised
SRC047	500.1	The subdivisions in 90.2 do not use the word "Installations." The word "installations" is not necessary and may not be reflective of all content in each subdivision, which may be other than an installation. The Correlating Committee advises that article scope statements are the responsibility of the Correlating Committee and the Correlating Committee accepts the panel action as revised by this SCR. Second Revision No. 7501-NFPA 70-2021 [Section No. 500.1]		X			Revised
FR8955	500.4	The additional language will help users of the Code understand that the documentation shall be available to the local AHJ as well as the contractors installing the equipment for all areas and locations that are classified or determined to be unclassified by the designer based on the protection provided.		X			Revised
FR8522	500.5(D)	The revisions reflect that an error in NFPA 499 where Class III ignitable fiber/flying and Class IIIA combustible fibers/flyings were stated as being equal has been corrected through the issuance of a tentative interim amendment (TIA) to NFPA 499. Combustible material that is both greater than 500 μ m in nominal size, which can form an explosive mixture was defined, and is stated to be a Class III location.		X			Revised
SR7532	500.5(B)(1)	Informational Note No. 2 has been revised to align it with list Items (11) through (15) and to remove the reference. The revision makes it part of Informational Note No. 1.		X			Revised
SR7836	500.5(D)	The revisions to 500.8(D)(2) and (D)(3) are based on the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and is necessary for correlation with changes to Articles 502, 503, and 506 and with other NFPA dust-related standards.		X			Revised
FR8769	500.6(C)	This new section reflects that an error in NFPA 499 where a Class III ignitable fiber/flying and Class IIIA combustible fibers/flyings were stated as being equal has been corrected by a tentative interim amendment (TIA) to NFPA 499-2021.		X			New section
SR7539	500.6	The comment substantiation is correct in stating the definitions of combustible fibers/flyings and ignitable fibers/flyings will should be in Article 100. They are being placed in Article 100 by a CMP 14 task group addressing definitions. The actions taken to revise both definitions are not supported by substantiation for making the		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		change. The revisions to 500.6 are to align with revision made in NFPA 499.						
FR8624	500.7	"Enclosed-break" is a Class I, Division 2 type of protection in accordance with ANSI/UL 121201. It is not a new Class I, Division 2 type of protection, but has not been identified in the NEC as such. This simply addresses that oversight. FR2-2 "Nonsparking" is a Class I, Division 2 type of protection in accordance with ANSI/UL 121201. It is not a new Class I, Division 2 type of protection, but has not been identified in the NEC as such. This simply addresses that oversight.		X				Revised
FR8631	500.7(K)(1)	Add the titles of the co-published FM standards for Informational Notes 2 and 4. Additionally the Informational Note No. 1 to ANSI/UL/FM 121303-2020 Guide for the use of combustible gas detection equipment has been revised. In addition, the Informational Notes are reworded to meet the requirements of NEC Style Manual 3.1.3.1. This is simply an editorial change and not intended to change the intent of the informational note.		X				Revised
FR8653	500.7	This action provides a reference to new Table 13 in Chapter 9 created by the action on Public Input 2287. The language of 500.7 has been revised to recognize the addition of new protection techniques.		X				Revised
SR7542	500.7(U)	The revision provides context as to the types of protection techniques that are permitted by 500.7(U).		X				Revised
SR7787	500.7(K)	Informational Note No.1 is revised to update a change in the referenced standard for gas detection systems and the term restricted industrial establishment has been added for correlation with the Article 100 definition.		X				Revised
SRC049	500.7(K)	The revision is necessary for correlation and consistency with changes that removed the word "combustible" within this section. This was identified in an affirmative ballot statement. SR-7787-NFPA 70-2021		X				Revised
FR8384	500.8(E)(3)	Requiring close-up plugs to be listed for the location makes it clear that the plugs must be compatible with the class and division where they are installed. CMP-14 does not concur with the recommended exception. Equipment is often shipped with temporary plugs which may not be listed for the location. The wording of the exception could be construed to allow these close-up plugs to remain. Listed equipment with integrated close-up plugs or blanking elements is controlled by 110.3(B).		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7552	500.8(A)	The informational note has been revised because the referenced standard is not directly related to the requirement.		X			Revised
SR7821	500.8(D)	The revisions to 500.8(D)(2) and (D)(3) are based on the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and is necessary for correlation with changes to Articles 502, 503, and 506 and with other NFPA dust-related standards.		X			Revised
	<i>501</i>	<i>Class I Locations</i>					
SR7775	501.1	The informational note for the scope is removed. The scope does not contain requirements making the informational note in violation of Section 3.1.3 of the NEC Style Manual. There is no associated requirement.		X			Revised
FR8454	501.10(A)(2)	The title of the standard referenced in Informational Note 1 to list item (4) has been updated. Informational Notes to list items 3 and 4 are reworded to meet the requirements of NEC® Style Manual 3.1.3.1. This is simply an editorial change and not intended to change the intent of the informational note.		X			Revised
FR8464	501.10(B)(1)	PVC coated RMC and IMC added to list item (1) as an acceptable subset of RMC and IMC that does not require the corrosion resistance pre-qualifier.		X			Revised
SR7709	501.10(A)(1)	A new information note is added referencing the definition of "restricted industrial establishments (as applied to hazardous (classified) locations)." With the removal of the "defining" text from several places in the section, it is important to send the user to the definition to confirm that the requirement has not changed.		X			Revised
SR7710	501.10(A)(2)	1. The first sentence of 510.10(A)(2) is revised for clarity and to form a complete sentence. The change conforms with similar changes made in Article 505. 2. With a new definition of "restricted industrial establishment (as applied to hazardous (classified) locations)" the defining text in list item 3 is removed. The removal of the text adds clarity by eliminating repeated text throughout Section 501.10. The requirement of the subdivision has not changed.		X			Revised
SR7720	501.10(B)	A new information note is added under 501.10(B) referencing the definition of "restricted industrial establishments (as applied to hazardous (classified) locations)."		X			Revised
FR8680	501.15(B)(2)	Type RTRC conduit was included by reference to 501.10(B)(1)(1).		X			Revised
FR8682	501.15(D)(1)	Type TC-ER-HL and Type P cables were inadvertently omitted from this section when added as permissible		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		wiring methods. Section 501.15(D)(1) Exception was revised to clarify that conductors shall be sealed in accordance with the instructions provided with the listed fittings required by 501.15(C).						
FR8688	501.15(E)(1)	Section 501.15(E)(1) Exception No. 2 was revised to clarify that conductors shall be sealed in accordance with the instructions provided with the listed fittings required by 501.15(C). The proposed text to add requirements for cable fittings was not accepted as these requirements are specified elsewhere in the code depending on cable and enclosure type. Exception No.1 is revised to align with NFPA 496.		X				Revised
SR7730	501.15(D)(1)	The revision changes the way the information is presented making it more organized and adding clarity. The exception is converted to positive language. There is no technical change in the requirements.		X				Revised
SR7735	501.15(E)(1)	The phrase "comply with the requirements of" has been abbreviated to "comply with". Revisions to the exception have been made for clarity.		X				Revised
SR7737	501.17	The language of the parent text of 501.17 is revised for clarity. There is no technical change in the requirement.		X				Revised
FR8391	501.30	Section 4.1.4 of the 2020 NEC Style Manual prohibits references to an entire article, with the exception of Article 100. As such, the corresponding language in this section is revised to refer to Parts V and VI of Article 250 in compliance with the Style Manual, without changing the intent of the section.		X				Revised
SR7747	501.105(B)(6)	The phrase "complying with the requirements of" is abbreviated. The change is consistent with like changes in this and other articles. (Comment 1290) With a new definition of "restricted industrial establishment (as applied to hazardous (classified) locations)" the defining text in Exception No. 2 is removed. The removal of the text adds clarity by eliminating repeated text throughout Section 501.10. The requirement has technically not changed.		X				Revised
SR7750	501.125(A)	With a new definition of "restricted industrial establishment (as applied to hazardous (classified) locations)" the defining text in 501,125(A)(4) is removed. The removal of the text adds clarity by eliminating repeated text throughout the CMP 14 articles. The requirement of the subdivision has not changed.		X				Revised
FR8767	501.135(B)(4)	The current language in (B) lists other types of utilization equipment but mistakenly is silent on luminaires. As luminaire requirements are found in 501.130, the		X				New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		committee is making it clear that luminaires must meet the stated requirements in a Class I, Division 2 location.					
FR9025	501.141	The first revision provides a new section rather than revising 501.105 which would limit the revision to meters, instruments, and relays.		X			New section
FR8686	501.145	The requirement for listing of plugs and receptacles has been added to 501.145.		X			Revised
	<i>502</i>	<i>Class II Locations</i>					
SR7808	502.1	An informational note has been added pointing to this definition in Article 100.		X			Revised
FR8398	502.10(B)	The revision adds text to (2) to clarify that PVC coated metal conduits are permitted for general applications where increased levels of corrosion protection are not required.		X			Revised
FR8409	502.10(A)(2)	The recommendations correctly updates the standard for Type P cable. The format of the sentence was revised to comply with Section 3.1.3.1 of the NEC Style Manual. The title of the standard is revised to match the title of 1309A shown on the UL standards webpage. The informational note to (6) has been converted into positive text and is now part of (2).		X			Revised
FR8383	502.30	Section 4.1.4 of the 2020 NEC Style Manual prohibits references to an entire article, with the exception of Article 100. As such, the corresponding language in this section is revised to refer to Parts V and VI of Article 250 in compliance with the Style Manual, without changing the intent of the section.		X			Revised
	<i>503</i>	<i>Class III Locations</i>					
SR7813	503.1	The revision adds the defined term “restricted industrial establishment (as applied to hazardous (classified) locations)” and removes the text providing the conditions under which a facility is considered to be an industrial establishment. An informational note has been added pointing to this definition in Article 100. Additionally the reference to Article 727 has been revised to Article 335. Dates of referenced standards have been deleted.		X			Revised
SR7815	503.1	This revision is based on the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and is necessary for correlation with changes to Articles 502 and 506. The Standards Council directed that the technical committees responsible for NFPA 499, NFPA 652, NFPA 654, and the NEC create public inputs or TIAs to those documents to resolve conflict among the documents mentioned.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7816	503.5	This revision is based on the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and is necessary for correlation with changes to Articles 502 and 506. The Standards Council directed that the technical committees responsible for NFPA 499, NFPA 652, NFPA 654, and the NEC create public inputs or TIAs to those documents to resolve conflict among the documents mentioned.		X			Revised
SR7817	503.6	This revision is based on the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and is necessary for correlation with changes to Articles 502 and 506 and with other NFPA dust-related standards.		X			Revised
FR8480	503.10(A)(3)	Type P cable has been added as an acceptable flexible wiring method in Class III, Division 1 locations. The existing informational note has been deleted and the concept of bonding has been added to (2).		X			Revised
FR8504	503.10(A)(1)	Type P cable has been added as an acceptable wiring method in Class III, Division 1 locations.		X			Revised
FR8431	503.30	A first revision has revised the entire section.		X			Revised
	<i>504</i>	<i>Intrinsically Safe Systems</i>					
SR7838	504.30(A)(1)	The revision addresses the concern expressed in the Correlating Committee Comment to differentiate sheet metal partitions from insulated partitions to eliminate the confusion that was caused by integrating the former exception into positive Code language.		X			Revised
	<i>505</i>	<i>Zone 0, 1, and 2 Locations</i>					
SR7764	505.1	The Scope is reorganized to follow the format of 90.2 and to make it clear what is covered in the article and what is not covered. The change improves usability and adds clarity.		X			Revised
SRC054	505.1	The subdivisions in 90.2 do not use the word "Installations." The word "installations" is not necessary and may not be reflective of all content in each subdivision, which may be other than an installation. The Correlating Committee advises that article scope statements are the responsibility of the Correlating Committee and the Correlating Committee accepts the panel action as revised by SCR 54. Second Revision No. 7764-NFPA 70-2021 [Section No. 505.1]		X			Revised
FR8741	505.3	This section is redundant to 90.3 and does not comply with the NEC® Style Manual section 4.1.4. As such, it is being deleted. This does not change the code or the fact that intrinsically safe systems are permitted in Zone 0, 1, and 2 locations as permitted in Section 505.15.		X			Deleted section

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Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7842	505.3	The general requirements in Part I of Article 250 apply to both grounding and bonding and have been added to the reference provided in 505.30(A) and (B). The parent text of 505.30(B) is revised to be consistent with the text used in the parent text of 505.30(A). Revisions have been made to update references to Articles 722 (725) and 335 (727).		X			Revised
FR8689	505.4	The standards references were updated to reflect the current editions/dates. The words ‘in industrial occupancies’ were deleted and other changes were made to correlate with the action on Public Input 3509. The recommendation to include UL 60079-10-1 is not accepted because the standard is not yet published.		X			Revised
SR7767	505.5(A)(1)	The last sentence referencing pyrophoric materials is being relocated to the scope, 505.1(B)(4) and is deleted from this subdivision. The sentence states that these materials are outside of the scope of the article. The text belongs in the scope under the heading of Installations Not Covered.		X			Revised
FR8593	505.8(N)	Accept Type of protection pressurized room “p” which is a specific protection means for rooms and buildings.		X			Revised
FR8636	505.8(l)(1)	Update the edition dates of the referenced standards in the informational notes. The changes are as follows: ANSI/ISA-60079-29-1 (12.13.01)-2013 and ANSI/ISA60079-29-2-2012 have been updated to ANSI/UL/FM 60079-29-1-2019 and ANSI/UL/FM 60079-29-2-2018. The informational notes are reworded to meet the requirements of National Fire Protection Association Report NEC® Style Manual 3.1.3.1. This is simply an editorial change and not intended to change the intent of the informational note.		X			Revised
SR7768	505.8(l)	Informational Note No.1 is revised to update a change in the referenced standard for gas detection systems and the term restricted industrial establishment has been added for correlation with the Article 100 definition. Dates have been removed from the reference standards. “Combustible gas detection systems” has been revised to “detection systems for flammable gases” to align with industry standards for this type of protection.		X			Revised
SR7790	505.8(Q)	Create SR The revision corrects the applicability of this type of protection.		X			Revised
FR8639	505.9(C)(2)	This action deletes Table 505.9(C)(2)(4) and revises the text in 505.9 (C)(2)(4) to reference new Table 13 in Chapter 9 created by the action on Public Input 2287.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
FR8645	505.9(E)(3)	The recommendation has been revised to make “close-up plug” the term “blanking element”. See the UL 60079-0 or UL 1203 for the definition of blanking element.		X				Revised
SR7769	505.9(C)(2)	The text of list item (1) under 505.9(C)(2) is revised for clarity. There is no change in the requirement. Informational Note No. 5 is revised by replacing the word “more” with “additional” for consistency with other informational notes that use an adjective to describe “information”.		X				Revised
FR8544	505.15(B)(2)	The PI correctly updates the standard for Type P cable. The format of the sentence was revised to comply with Section 3.1.3.1 of the NEC Style Manual. The title of the standard is revised to match the title of 1309A shown on the UL standards webpage. Informational Notes to (3) and (4) are reworded to meet the requirements of NEC® Style Manual 3.1.3.1. This is simply an editorial change and not intended to change the intent of the informational notes.		X				Revised
FR8549	505.15(C)(1)	The PI correctly updates the standard for Type P cable. The format of the sentence was revised to comply with Section 3.1.3.1 of the NEC Style Manual. The title of the standard is revised to match the title of 1309A shown on the UL webpage.		X				Revised
SR7772	505.15(B)	505.15 (B) – A new information note is added referencing the definition of Industrial Establishments (as applied to hazardous (classified) locations).		X				Revised
SR7779	505.15(C)	505.15(C) - A new information note is added referencing the definition of “restricted industrial establishments (as applied to hazardous (classified) locations)”. With the removal of the “defining” text from several places in the section, it is important to send the user to the definition to confirm that the requirement has not changed.		X				Revised
FR8548	505.16(B)(3)	Pressurized rooms are addressed in ANSI/UL 60079-13-2020 while Purged and Pressurized equipment is addressed in NFPA 496-2017. The addition of pressurized rooms to 505.16(B)(3) makes it clear that these rooms must meet the requirements in the subdivision. The requirements are needed to ensure the safety of these rooms but are often not used when installing the electric to them. Informational Note No. 2 is revised to comply with Section 4.1.3 of the NEC Style Manual.		X				Revised
FR8551	505.16(C)(1)	The current text of 505.16(C)(1) is confusing.		X				Revised
FR8555	505.16(C)(2)	There is a need for enforceable requirements for sealing cables that enter breathing type “nR” enclosures and to		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		clear up any confusion about direct entry into them. Cables permitted in 505.16 are capable of passing gases and vapors creating a need to seal the cables.						
SR7781	505.16(C)(1)	1. References to rigid metal conduit and intermediate metal conduit have been reviewed and the correct wiring method designation updated as needed. 2. The adjective “further” is deleted from the informational note under 505.16(C) (1)(e) for consistency with first revision task group style manual editorial changes. 3. The edition date of the NFPA standard is removed.		X				Revised
SR7783	505.16(C)(2)	The term ‘located” is replaced in the parent text of 505.16(C)(2) with “installed” for consistency with other requirements using the phrase “in accordance with” to introduce locations of code requirements		X				Revised
SR7784	505.17(A)	A new informational note is added under (A)(6) to alert users that the term “restricted industrial establishment” as used in Article 505 is defined in Article 100 and designated as “Industrial Establishment (as applied to hazardous (classified) locations).” This revision is also made in the first paragraph of this section.		X				Revised
FR8486	505.20(C)	Adding the provisions of 501.125(B) (4) and (5) for surface temperatures related to space heaters and sliding contact shaft bonding is warranted.		X				Revised
SR7785	505.20(C)	The standard date and title for the reference in Informational Note No. 3 is updated and the term “Class 1” is deleted from “Class I, Zone 2” as it is no longer used in the Zone designations. The word further used as an adjective for information is removed for consistency.		X				Revised
FR8386	505.25	The section number has been revised for consistency throughout the hazardous (classified) location articles.		X				Revised
SR7786	505.26	The parent text of 505.26 is revised for clarity. There is no technical change to the requirement. The word “overpressuring” is corrected (over pressuring).		X				Revised
	506	<i>Zone 20, 21, and 22 Locations for Combustible Dusts or Ignitable Fibers/Flyings</i>		X				
FR8642	506.1	The scope statement was expanded to clearly describe what is not covered in this Article, similar to 500.1 and 505.1, and Informational Note No 3 is deleted as this is now written in the actual scope. Informational Note No. 4 is renumbered accordingly. This is simply an editorial change and not intended to change the intent of the informational notes.		X				Revised
SR7840	506.1	Section 506.1 has been revised to contain two sections on what is covered and what is not covered by Article 506 to improve clarity of the article scope.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SRC056	506.1	The subdivisions in 90.2 do not use the word “Installations.” The word “installations” is not necessary and may not be reflective of all content in each subdivision, which may be other than an installation. The Correlating Committee advises that article scope statements are the responsibility of the Correlating Committee and the Correlating Committee accepts the panel action as revised by SCR 56. Second Revision No. 7840-NFPA 70-2021 [Section No. 506.1]		X			Revised
SR7867	506.2	Section 506.20 is revised for correlation with the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and provides necessary correlation with changes to Articles 502 and 503.		X			Revised
FR8723	506.3	This section is redundant to 90.3 and does not comply with the NEC® Style Manual section 4.1.4. As such, it is being deleted. This does not change the code or the fact that intrinsically safe systems are permitted in Zone 20, 21, and 22 locations as permitted in Section 506.15.		X			Deleted section
SR7843	506.4	The parent text of 506.4 is revised to require that the documentation provided be an area classification drawing.		X			Revised
SR7863	506.5	Section 506.5 is revised for correlation with the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and provides necessary correlation with changes to Articles 502 and 503.		X			Revised
SR7864	506.6	Section 506.6 is revised for correlation with the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and provides necessary correlation with changes to Articles 502 and 503. The Standards Council directed that the technical committees responsible for NFPA 499, NFPA 652, NFPA 654, and the NEC create public inputs or TIAs to those documents to resolve conflict among the documents mentioned.		X			Revised
SR7865	506.7	Section 506.7 is revised for correlation with the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and provides necessary correlation with changes to Articles 502 and 503. The Standards Council directed that the technical committees responsible for NFPA 499, NFPA 652, NFPA 654, and the NEC create public inputs or TIAs to those documents to resolve conflict among the documents mentioned.		X			Revised
FR8626	506.8(N)	Add type of protection “p”.		X			Revised
SR7857	506.8(P)	The revision corrects the applicability of this type of protection.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8644	506.9(C)(2)	This action deletes Table 506.9(C)(2)(3) and revises the text in 506.9 (C)(2)(1) and (C)(2)(3) to reference new Table 13 in Chapter 9 created by the action on Public Input 2287.		X			Revised
SR7844	506.9	The revisions to (B) and (C) are made for correlation with the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and provides necessary correlation with changes to Articles 502 and 503.		X			Revised
SR7845	506.15	The revision adds the defined term “restricted industrial establishment (as applied to hazardous (classified) locations)” and removes the text providing the conditions under which a facility is considered to be an industrial establishment.		X			Revised
SR7866	506.16	Section 506.16 is revised for correlation with the revised definitions for combustible fibers/flyings and ignitable fibers/flyings and provides necessary correlation with changes to Articles 502 and 503. The Standards Council directed that the technical committees responsible for NFPA 499, NFPA 652, NFPA 654, and the NEC create public inputs or TIAs to those documents to resolve conflict among the documents mentioned.		X			Revised
FR8404	506.25	The section number has been revised for consistency throughout the hazardous (classified) location articles.		X			Revised
FR8305	510	Article 510 has been deleted, however the necessary text has been added to Articles 511-516 to ensure compliance with Articles 500, 505 and 506. Article 517 is under the purview of CMP-15 and they will have to create a separate action for that article. It is also noted that there is a reference to Article 510 in Table 225.3 that is under the purview of CMP-10.		X			Deleted article
	<i>511</i>	<i>Commercial Garages, Repair and Storage</i>					
FR8310	511.2	This new requirement provides the necessary link from Article 511 to Articles 500 and 505 which became necessary with the deletion of Article 510.		X			New section
SR7868	511.2	New Table 511.2 has been created to identify the specific sections of other articles that are applicable to commercial garages.		X			Revised
SR7869	511.3(D)	The text has been modified to align with the wording used in 511.3(C) and per the Correlating Committee’s comment regarding the use of the term ‘guidance’.		X			Revised
FR8558	511.7(A)(1)	The proposed FR changes the wiring methods to a list format as suggested in the Style Manual, The reference to entire articles is corrected.		X			Revised
SR7870	511.7	The requirement for RTRC to include the suffix -XW was deleted as it was redundant.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8561	511.8	The panel agrees that the intermediate metal conduit should be threaded. The panel also changed the exception to positive code text to express the requirement more effectively in accordance with Section 3.1.4 of the NEC Style Manual.		X			Revised
SR7871	511.8	The term “Class I” was replaced by “Hazardous (Classified)” in the title as the Zone classification system no longer uses the “Class I” designation. In item (2) the word “and” was changed to “or” to denote that either wiring method is permitted.		X			Revised
	512	<i>Cannabis Oil Equipment and Cannabis Oil Systems Using Flammable Materials</i>					
FR8499	512	A new Article 512 has been added to cover cannabis oil equipment and cannabis oil systems using flammable materials. The proposed text of the public input has been revised to comply with the NEC Style Manual and to remove aspects of cannabis oil operations not within the purview of the NEC.		X			New article
SR7873	512.2	New Table 512.2 has been created to identify the specific sections of other Articles that are applicable to cannabis oil equipment and cannabis oil systems using flammable materials.		X			Revised
	513	<i>Aircraft Hangars</i>					
FR8311	513.2	This new requirement provides the necessary link from Article 513 to Articles 500 and 505 which became necessary with the deletion of Article 510.		X			New section
SR7875	513.2	New Table 513.2 has been created to identify the specific sections of other Articles that are applicable to aircraft hangars.		X			Revised
	514	<i>Motor Fuel Dispensing Facilities</i>					
SR7876	514.1	The informational notes have been combined for clarity. The date in the informational note is retained because there is text in Article 514 that is extracted from NFPA 30A-2021.		X			Revised
FR8312	514.2	This new requirement provides the necessary link from Article 514 to Articles 500 and 505 which became necessary with the deletion of Article 510.		X			New section
SR7877	514.2	New Table 514.2 has been created to identify the specific sections of other articles that are applicable to motor fuel dispensing facilities.		X			Revised
SR7878	514.4	The term “Class I” was replaced by “Hazardous (Classified)” in two locations as the Zone classification system no longer uses the “Class I” designation.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8566	514.7	The permitted wiring methods should not be located in another article. Having the wiring means in the article that requires them makes the section clearer. The panel revised 514.7 so that it no longer contains a long list of approved wiring methods, in paragraph format. Section 3.3.2 of the NEC Style Manual states that lists or tables should be used rather than long text descriptions.		X			Revised
SR7879	514.7	The requirement for RTRC to include the suffix -XW was deleted as it was redundant.		X			Revised
	<i>515</i>	<i>Bulk Storage Plants</i>					
FR8313	515.2	This new requirement provides the necessary link from Article 515 to Articles 500 and 505 which became necessary with the deletion of Article 510.		X			New section
SR7882	515.4	Reference to “the hazardous (classified) location” was replaced by a reference to Table 515.2 for clarity. The last sentence of 515.4 has been deleted as it was redundant.		X			Revised
FR8738	515.7	Wiring methods currently included in 515.7(A) are consistent with Class I, Division 2 wiring methods, however the list is not consistent with the full list of wiring methods permitted for Division 2 in 501.10(B).		X			Revised
	<i>516</i>	<i>Spray Application, Dipping, Coating, and Printing Processes Using Flammable or Combustible Materials</i>					
SR7885	516.1	Informational Notes No. 1 and No. 3 have been combined. The dates on NFPA 33 and NFPA 34 have been retained as they reference extracted text from particular editions of the documents. The date on NFPA 91 has been deleted as permitted by the NEC Style Manual.		X			Revised
FR8315	516.2	This new requirement provides the necessary link from Article 516 to Articles 500, 505 and 506 which became necessary with the deletion of Article 510.		X			New section
SR7886	516.2	New Table 516.2 has been created to identify the specific sections of other Articles that are applicable to spray application, dipping, coating and printing processes using flammable or combustible materials.		X			Revised
FR8747	516.4	The dimension in list item (5) has been corrected from 3.5 meters to 3.05 meters.		X			Revised
FR8575	516.7(A)	The permitted wiring methods should not be located in another article.		X			Revised
SR7887	516.7	The application of RTRC is covered by Article 355, the need for RTRC with the suffix -XW is based on whether it is subject to physical damage as covered by 355.12(C).		X			Revised
FR8576	516.38(A)	The subdivision was revised to place the approved wiring means in list format in accordance with the guidance provided in Section 3.3.2 of the NEC Style Manual and to		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		coordinate with similar revisions to 511.7(A), 514.7, 515.7(A), and 516.7(A).					
SR7888	516.38	The requirement for RTRC to include the suffix -XW was deleted as it was redundant. The application of RTRC is covered by Article 355, the need for RTRC with the suffix -XW is based on whether it is subject to physical damage as covered by 355.12(C). In items (1) and (3), the word "and" was changed to "or" to denote that either wiring method is permitted.		X			Revised
	<i>517</i>	<i>Health Care Facilities</i>					
SR8694	517	The scope of Article 517 was revised to incorporate the text and informational note formally found in 517.11 in the 2020 NEC which was relocated to 517.4 for First Draft of the 2023 NEC. The information provided is related to the scope of the article so it should be located in 517.1. The CMP understands the NEC CC has jurisdiction over scope statements, and recommends approval.		X			Revised
SR8696	517.3	There is now no meaningful distinction between a "normal" source and an "essential system" source.		X			Revised
FR8150	517.6	Patient care-related electrical equipment is different than electrical equipment in 110.21(A) as it is expected to be recommissioned or recertified when it is relocated. The informational notes add clarity that this type of equipment is highly specialized and is not covered in this Code.		X			New section
SR8606	517.7	Informational note 3 and 4 have been changed to make it clear the list is examples.		X			Revised
FR8089	517.10(B)	CMP-15 reviewed all Informational Notes found in Article 517 for consistency with the NEC Style Manual and found no inconsistencies.		X			Revised
SR8562	517.10(B)	See the action by CMP-2. These rooms are used exclusively for patient sleeping and the devices would not be required where patient monitoring, treatment or procedures are being performed.		X			Revised
FR8160	517.14	It is a very common practice of using busbars as a means of terminating grounding and bonding conductors. This practice is permitted in Section 250.30(A)(6)(c) for grounding electrode tap connections of separately derived systems, 250.64(D)(1)(3) for termination of grounding electrode conductor taps, and 250.94(B) for bonding of systems.		X			Revised
SR8564	517.20(A)	Without this change, the section requires BOTH IPS and GFCI. Removed the requirements in the informational note in accordance with 3.1.3 of the NEC Style Manual.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8222	517.22	Technical studies presented to the panel indicates wide discrepancies between current demand factors and real-world data collected at multiple locations under various real world conditions. The panel adopts new 517.22 to provide an appropriate degree of safety factors while assuring the continuity of reliable electrical power to patients and health care providers.		X			Revised
SR8598	517.22	These demand factors for receptacle loads were developed by the joint task group of CMP-15/CMP-2 and are correlated with Second Revision SR-8097 (CMP-2).		X			Revised
SRC035	517.22	The Correlating Committee directs that the section be rewritten to change the reference from 220.48 to 220.110 since the section is relocated. Second Revision No. 8598-NFPA 70-2021 [Section No. 517.22]		X			Revised
SR8601	517.25	The informational note has been revised to be informational only and not a requirement.		X			Revised
FR8162	517.31(E)	CMP-15 updates the NFPA 99 extract.		X			Revised
FR8107	517.40(C)	The Informational Notes do not provide value to the user of the code so they are deleted.		X			Revised
SR8697	517.41	There is now no meaningful distinction between a "normal" source and an "essential system" source.		X			Revised
FR8234	517.70	The panel has reviewed Part V and makes the following changes to bring this part into a more contemporary context. This FR incorporates all of the PIs submitted for Part V.		X			Revised
SR8607	517.73	The study has not been completed so the factors need to revert back to the factors in the 2020 edition.		X			Revised
FR8153	517.80	Power over Ethernet is a Power-Limited system that provides signaling and communications and it delivers power to devices such as Wireless Access Points and Lighting. It falls under the requirements/restrictions of Class 2. While the term "Power over Ethernet" is not defined directly in the NEC, it is referred to under its basic definition of circuits that "transmit power and data to a powered device." This revision will allow PoE systems omit grounding and mechanical protection requirements.		X			Revised
	<i>518</i>	<i>Assembly Occupancies</i>					
SR8644	518.1	The CMP identified that the informational note for determining population capacity is applicable to all of Article 518 and relocated to the 518.1 Response		X			Revised
FR7981	518.2(A)	Casinos and gaming facilities are assembly occupancies that are more prevalent than some of those already included 518.2(A). Often, electrical equipment suitable		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		for use in exhibition halls are intended equally for use in casinos and similar gaming facilities.					
SR8503	518.2(C)	The panel accepts the Correlating Committee suggestion for increased clarity and usability.		X			Revised
SR8653	518.5	The section was revised into a list format with titled subdivisions for clarity and usability as there were number of requirements in a single paragraph.		X			Revised
	520	<i>Theaters, Audience Areas of Motion Picture and Television Studios, Performance Areas, and Similar Locations</i>					
FR8002	520.10	A new ANSI/ESTA standard E1.58 has been recently published that directly covers use of stage and studio equipment outdoors in compliance with 520.10. An Informational Note is now needed to direct NEC users of 520.10 to this standard for additional information.		X			Revised
SR8505	520.21	The panel modified the content of 520.21 to incorporate the contents of approved TIA 1573.		X			Revised
SR8509	520.53	As of June 29, 2021 TIA 1574 had passed final ballot with CMP15 and the Correlating Committee.		X			Revised
SR8515	520.54(K)	The section was revised by replacing “qualified personnel” with the defined term “qualified person” , shown in the plural in accordance with 3.3.3 of the NEC Style Manual. This action is to correlate with the action taken on PC 1019.		X			Revised
FR8005	520.62	There is no functional difference between a Portable Switchboard and a Portable Power Distribution Unit from a construction safety point-of-view.		X			Revised
FR8007	520.68(D)	For more than 30 years, large numbers of portable multi-circuit cable systems have been safely used on a wide variety of applications in Article 520 and 530 occupancies.		X			New section
SRC060	520.68(D)	The reference of 406.8 has been corrected to 406.4(f) due to an error made in the original FR and SR. The original intent of 520.68(D)(5) was to except the requirements of 406.4(F) of the non-interchangeability of the use of the same connector at different voltages, types of circuits (AC or DC) or frequencies in the same facility. Second Revision No. 8512-NFPA 70-2021 [Section No. 520.68(D)]		X			Revised
	525	<i>Carnivals, Circuses, Fairs, and Similar Events</i>					
FR8017	525.3(B)	The text is deleted as it did not supplement or amend the requirements of Chapters 1 through 7. In accordance with 90.3, if the requirements of Chapters 1 through 7 are not modified, they apply.		X			Deleted section
FR8019	525.3(C)	The text is deleted as it did not supplement or amend the requirements of Chapters 1 through 7. In accordance with 90.3, if the requirements of Chapters 1 through 7 are not modified, they apply.		X			Deleted section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8021	525.3(D)	The existing text of 525.3(D) was retained and moved to (B), while adding specific parts of Article 680 to comply with the NEC Style Guide. Some, but not all, of the requirements of Article 680 need to be specifically called out in Article 525 so that they are not inadvertently missed. One example would be a ride that includes an enclosed body of water that specifically requires GFCI protection in Article 680, but might otherwise fall under certain GFCI exemptions for rides in Article 525.		X			Revised
FR8023	525.31	CMP-15 deleted text in 525.31 as it does not supplement or modify the grounding requirements in Article 250, but simply repeats that general requirement. NEC 90.3 indicates those general requirements apply to special occupancies without repeating the text. The remaining text is the only part of this requirement that supplements or modifies the general requirements in Article 250 as it modifies the general requirements in 250.32 for feeder or branch circuit supplied buildings or structures.		X			Revised
	530	<i>Motion Picture and Television Studios and Remote Locations</i>					
FR8211	530	For many years, equipment and safe practice in Article 530 occupancies did not change in any material way, and thus the wording of Article 530 needed little change. However, over the past five years, there has been an onslaught of new technology that has been brought to studios and locations. Old technologies have disappeared and been replaced with new technologies that bear directly on the content of Article 530.		X			Revised
FR8212	530.11	This section was reworked to put list of items into list format, to put the exception into positive text, and better identify portions of the NEC being referred. Addition of clarifying language regarding communications circuits and communications circuits that also deliver Class 2 power is added. Should FR-8211 (PI-3103) prevail, this text of 530.11 is no longer required as it was integrated into FR-8211.		X			Revised
SR8524	530.11	A specific reference to GFCI was added for clarity and to improve searchability. Note that the intent is to exclude outdoor applications using the FR reference to 210.8(B)(6).		X			Revised
FR8218	555.15	For more than 30 years, large numbers of portable multi-circuit cable systems have been safely used on a wide variety of applications in Article 520 and 530 occupancies.		X			New section
	545	<i>Manufactured Buildings and Relocatable Structures</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7705	545.22	The panel revised the requirement to clarify that a relocatable structure needs to be supplied by a feeder. This clarification is in concert with Article 550 where service equipment is not allowed on a structure without a permanent foundation and the existing definition of a relocatable structure. The committee has divided 545.22(D) into listed items to meet the intent of PI-1255.		X			Revised
	<i>547</i>	<i>Agricultural Buildings</i>					
FR7746	547.5(A)	CMP-7 agrees with the submitter that at the time rigid nonmetallic conduit was added to this article no other rigid nonmetallic conduits were in existence. No substantiation was submitted for other than Rigid PVC Conduit for use in agricultural installations.		X			Revised
FR7748	547.5(E)	CMP-7 agrees with the submitter that rodents and pests eating nonmetallic cables concealed in walls and ceilings of areas adjoining livestock containment areas is a potential hazard and should not be permitted.		X			Revised
FR7756	547.10(B)	CMP-7 agrees that clarification of the equipotential plane bonding requirements is needed to make clear the bonding connection shall be associated with the grounding system of the equipotential plane and not just any part of any nearby grounding system. In addition, bonding to a circuit equipment grounding conductor would create difficulties in bonding a 8 AWG bonding conductor with the equipment grounding conductors of smaller sizes such as 15 or 20 A branch circuits.		X			Revised
SR8605	547.20(A)	The sentence for 547.20(A) is modified to remove redundant text as NEC 90.3 already addresses applicability.		X			Revised
SR8619	547.28	Regardless of whether an equipotential plane is installed, if an equipotential plane is required then only the 125V, 15 and 20A receptacles will require GFCI protection.		X			Revised
	<i>550</i>	<i>Mobile Homes, Manufactured Homes, and Mobile Home Parks</i>					
FR7763	550.10(I)	CMP-7 agrees with the submitter that at the time rigid nonmetallic conduit was added to this article no other rigid nonmetallic conduits were in existence. Clarification has also been added that the requirement includes RMC and IMC are considered raceways as defined. The clarification would allow for identified rigid metal or nonmetallic raceways.		X			Revised
SR8633	550.13(B)	CMP-7 disagrees with submitter's substantiation that this section modifies 422.5. The language was clarified related to locations and outlets that are required to be GFCI		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		protected. CMP-7 added specific reference to 422.5(A) for clarity.					
FR7786	550.15	This revision will clarify the intent to avoid terminating dissimilar metals in accordance with 110.14. Copper-clad aluminum is only permitted for terminations listed for CU-AL. See category code ZMVV in UL Product IQ database.		X			Revised
SR8640	550.15	The articles contained in Chapter 5 are for Special Occupancies.		X			Revised
FR7797	550.25	CMP-7 deletes the list items in 550.25 and the language pointer to definitions in Article 100.		X			Revised
FR7832	550.32(A)	CMP-7 address the concerns of the submitter by revising the language in 550.32(A) to clarify mobile home service equipment locations and applications. This revision replaces within sight of and within 30ft with readily accessible and visible to the mobile home it serves. CMP-7 takes note of the 2020 NEC changes for an emergency disconnect now required at dwelling units.		X			Revised
SR8649	550.32(A)	The articles contained in Chapter 5 are for Special Occupancies.		X			Revised
FR7874	550.33(A)	The added sub-section provides guidance to the user of the Code on installations where the disconnecting means is not service equipment. This revision also places limitations on installing a feeder disconnect in or on a mobile or manufactured home similar to service equipment.		X			New section
	<i>551</i>	<i>Recreational Vehicles and Recreational Vehicle Parks</i>					
FR7873	551.3	The definition for "Electrical Datum Plane" in Article 100 (see actions taken on PI-1518) by CMP-7 includes the words 'normal high water level" and this addition in 551.3 addresses the electrical datum plane distances located in a RV park.		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7851	551.40(D)	This action was taken as a step to reduce RV electrical shock accidents also known as “hot skin” conditions. The 120V electrical systems of RVs are wired with the neutral conductor and grounding conductor isolated from each other. As a result, the grounding point for an RV is achieved through the electrical connection it makes when it is plugged in at a receptacle. The inclusion of a reverse polarity indicator will only indicate the pedestal is wired improperly. It does not improve the safety of the RV. Including this requirement into the RV electrical system to be detected after the connection is made to the receptacle is too late. The validation of the electrical receptacle that feeds the RV from campground or other authorized grounded receptacle should be done prior to the electrical connection. There are many after-market devices that perform this function that able to be purchased by a consumer. This requirement should not be placed upon the RV to perform.			X	100	Reduce shock hazard
FR7876	551.47(L)	Metal faceplates shall comply with 406.6(A). Nonmetallic faceplates shall comply with 406.6(C).		X			Revised
FR7877	551.47(N)	The change in this case does not limit listed and identified wiring methods as required in 551.40(A) and 551.40(B) or create unintentional design restrictions.		X			Revised
FR7877	551.47(N)	The change in this case does not limit listed and identified wiring methods as required in 551.40(A) and 551.40(B) or create unintentional design restrictions.		X			Revised
SR8669	551.47(N)	Submitter’s substantiation to remove the last sentence is rejected since it provides clarity to installers. An example, NM cable cannot be used in wet locations or within conduit in wet locations. Section 300.9 indicates that the interior of the raceway installed in a wet location is a wet location as well. Requirements for the section are separated and placed in a list format, in accordance with the NEC Style Manual.		X			Revised
FR7879	551.54(C)	In reference to RV there is no need to include Grounded and Neutral. A grounded conductor is the intentionally grounded phase conductor. The neutral conductor in an RV is always a floating conductor and is insulated from the ungrounded conductor and the equipment grounding conductor.		X			Revised
FR7880	551.71(B)	CMP-7 accepts the changes to part B with the addition of “weather resistant” for 30 ampere receptacles but chooses not to add “weather resistant” at this time to part C based on unknown unavailability of 50 ampere devices in the near future.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8670	551.71(C)	The weather-resistant receptacle requirement has been added with an effective date of January 1, 2026 as the addition of this requirement now could create a burden on installers from AHJs who would require a weather-resistant receptacle that may not meet the actual intent.		X			Revised
SR8667	551.72(E)	The use of cord and plug connected autotransformers in a RV park or a campground distribution system should not be prohibited however an informational note was added to address concerns related to the usage of multiple autotransformers on a single feeder. The permissive language of using listed surge protection devices is continued in 551.72(E) Response		X			Revised
SR8672	551.72(C)	The term "branch" is removed to provide clarity and the intent of CMP-7 first revision (FR-8168).		X			Revised
FR7871	551.77	CMP-7 adds the requirement for listing of recreational vehicle site supply equipment to the parent text of 551.77. This was created based on the resolved action to PI-781 since requirements cannot be added to definitions.		X			Revised
	552	<i>Park Trailers</i>					
SR8681	552.41(A)	CMP-7 replaces the phrase shall be exempt with shall not be required. The term "shall be exempt" was replaced with the "shall not be required" for clarity in Exception No 1 to indicate that spacing requirements are not mandatory.		X			Revised
SR8682	552.43(C)	The term "suitable" was replaced with the defined term "identified" to provide clarity. RTRC was not added into the list of items since other raceways identified for the location would permit its use.		X			Revised
	555	<i>Marinas, Boatyards, Floating Buildings, and Commercial and Noncommercial Docking Facilities</i>					
FR7911	555.4	Adding the distance for the service location and height above the electrical datum plane, promotes electrical safety and enforceability. In addition, the new language will provide consistency between similar requirements in Articles 682 and 555.		X			Revised
FR7912	555.6	When the shore power and boat hoist utilize the same source (pedestal), the boat hoists wouldn't be in use when the shore power is connected. Because this is considered a non-coincidental load, the use of only the larger KW rating of the two loads would be appropriate for calculating purposes.		X			Revised
SR8685	555.6	The language clarifies that each shore power pedestal kilowatt-hour submeter for each slip can be used for the		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		calculation. The editorial changes address the initial intent of the text.					
SRC032	555.6	The Correlating Committee revises this requirement based on changes made by CMP-7 in SR8685 and the requirement is relocated to a new Part VII, as Section 220.120. The Correlating Committee assigns responsibility for Part VII to CMP-7.		X			Revised
SRC033	555.6	The Correlating Committee directs that the section be revised as follows, The first sentence for 555.6 is retained with the reference to Table 555.6 be revised to 220.120. The balance of the section is removed. Second Revision No. 8685-NFPA 70-2021 [Section No. 555.6]		X			Revised
SR8686	555.13	The public comment clarified an issue that needed to be considered and was addressed by the committee. The language clarifies that an equipment grounding conductor in a branch circuit or feeder, when extended to electrical equipment or circuits on the dock, would not require an additional 8 AWG for bonding.		X			Revised
FR7925	555.14	Enhanced safety will be achieved by requiring an equipotential plane to mitigate step and touch voltages for electrical equipment that supplies power to equipment located at or on docks. In addition, this section correlates with section 682.33 with same title.			X	varies	Reduce shock hazard
SR8687	555.14	The panel disagrees with the submitter’s request to remove this section.		X			Revised
FR7926	555.15	Electrical systems installed at docking facilities are exposed to harsh environments. When equipment is replaced, the inspection, and maintenance of the entire circuit will ensure safe electrical installations to reduce the incidents related to electric shock drowning.		X			New section
FR7932	555.34(A)	For the revisions made to 55.34(A), Chapter chapter 3 wiring methods must include an insulated equipment grounding conductor to be consistent with 555.37.		X			Revised
FR7917	555.35(D)	The 555.9 Boat Hoist requirements has been moved to 555.35(D). This change places all the GFCI requirements under one location, which provides added clarity and usability.		X			Revised
SR8689	555.35(C)	The term “Class A” when referencing GFCI protection for personnel has been removed since “Class A” is explicitly included in the Article 100 definition of GFCI. The reference to 680.2 regarding the low-voltage contact limit definition is removed because that definition is now located in Article 100 and thus needs no reference.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8690	555.35(E)	The future effective date is anticipated to provide sufficient time for standard development, design, certification, and implementation of these devices.		X			Revised
FR7936	555.36	While the ground fault protection of equipment required in 555.35(A)(1) and (A)(3) may provide some protection to swimmers in the water away from an energized boat or dock, it will not provide electric shock protection for a swimmer touching an energized metal boat, dock or ladder. An emergency disconnect within sight of the marina power outlet or enclosure providing shore power to a boat, will allow bystanders to quickly de-energize power to the boat and dock nearest the swimmer - greatly reducing ESD incidence.		X			Revised
FR8169	555.37	Organized for clarity and to align with 682. The identification of the equipment grounding conductor is already covered in 250.119. Added cord-and-plug connected appliances to address the hazards associated with those that are not double-insulated. Added the exception to permit an uninsulated grounding conductor where the environmental conditions of the installation permit.		X			Revised
FR7931	555.38	Luminaires are currently not addressed in Article 555. The language adds clarity for both installers and AHJ's to address the electrically safe installations of luminaires at docking facilities in order to reduce the incidents of electric shock drowning.			X	40/luminaire	Reduce shock hazard
SR8691	555.38	Low voltage luminaires that are identified as submersible would adequately meet the safety concerns addressed by this section, and therefore should be permitted.		X			Revised
FR7939	555.53	Language was added to address outdoor outlets, shore power outlets, and boat hoists GFCI or GFPE protection to coincide with in accordance with 555.35.		X			Revised
FR8168	555.72	CMP-7 has moved information from 551.72(C) to 551.72(D) and made a clarification that the RV 50 amp circuit is a feeder. The moved language is more closely related to the topic within 551.72(D). The new informational note which follows 551.72(D) has new information for clarity between RV site loads and permanently connected loads. The informational note in the 2020 NEC has been updated to informational note 2.		X			Revised
	590	<i>Temporary Installations</i>					
FR9459	590.4(B)	The appropriate rules in Article 445 for overcurrent protection of feeders supplied from a generator are referenced along with the rules from Article 240 to		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		eliminate the possible requirement of adding redundant protection.					
FR9464	590.8(B)	For circuits where the available fault current is less than 10kA, conventional devices typically operate in a time frame that limits the amount of energy being released under fault conditions to a level that is manageable.		X			Revised
SR8581	590.8	Informational note has been revised and relocated to section (A) to comply with the Style Manual.		X			Revised
Chapter 6: Special Equipment							
	600	<i>Electric Signs and Outline Lighting</i>					
FR7625	600.4(E)	The panel revised the language to be compatible with other sections of the code and change the unenforceable term "sufficient" per Table 3.2.1 in the NEC Style Manual. The term "environment involved" includes elements such as UV protection.		X			Revised
FR7627	600.5(A)	CMP-18 reformats the last sentence as Exception No.1 to comply with Section 2.4.4 in the NEC Style Manual. Exception No.2 was added to clarify the additional equipment required to power the sign circuit and may be included in the rating of the branch circuit.		X			Revised
FR7629	600.6	CMP-18 adds the indication (on/off position) of the disconnecting means. This is consistent with the reference to 404.7.		X			Revised
FR7632	600.7(B)(7)	CMP-18 includes include copper-clad aluminum as an equipment grounding conductor and provides reference to 250.120 and 250.122.		X			Revised
FR7633	600.7(B)(8)	During a number of code cycles the correct reference has been lost and is incorrect now corrected. The informational note was corrected as required by the 2020 NEC Style Manual.		X			Revised
SR8197	600.7(B)(7)	Adding the word "also" further clarifies the intent.		X			Revised
SR8200	600.7(B)(3)	The text "permitted to be" was removed for clarity and ease of use.		X			Revised
FR7745	600.100(A)(2)	CMP 7 agrees with submitter that EMT would be a suitable wiring method in 604.100(A)(2) for manufactured wiring systems.		X			Revised
	604	<i>Manufactured Wiring Systems</i>					
FR7713	604.100(A)(1)	Based on 2020 revisions to the NEC, Section 110.14, copper-clad aluminum is no longer considered a dissimilar metal to copper and as such is permitted in 604.100(A)(1).		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR7714	604.100(A)(2)	Based on 2020 revisions to the NEC, Section 110.14, copper-clad aluminum is no longer considered a dissimilar metal to copper and as such is permitted in 604.100(A)(2).		X			Revised
SR8620	604.100(A)(2)	“Tubing” is added to the title of (A)(2) and wiring method acronyms are added for clarity and usability. Metallic and nonmetallic liquidtight conduits were specifically detailed instead of generically “flexible liquid tight conduit” as these are permitted wiring methods in UL 183, the Standard for Manufactured Wiring Systems.		X			Revised
SR8623	604.100	The CMP agrees that the title of 604.100 should be revised to include tubing now that EMT has been added.		X			Revised
	610	<i>Cranes and Hoists</i>					
SR7584	610.13(D)	Section 610.13(D) has been removed as it is redundant with 90.3.		X			Deleted section
	620	<i>Elevators, Dumbwaiters, Escalators, Moving Walks, Platform Lifts, and Stairway Chairlifts</i>		X			
FR9291	620.6	The requirements were adjusted to be in a list format aligning with the Style Manual, adding clarity. The phrase a “listed Class A” was added to the text of the section to clarify the requirements that already existed, that the GFCI be listed and that it be a Class A device.		X			Revised
FR9300	620.11	UL references have been updated. The informational note has been updated to align with the NEC Style Manual Section 3.1.3.1.		X			Revised
FR9328	620.12(A)	Permitting a communications limited power cable in the traveling cable accommodates all communications and Class 2 applications including power over Ethernet (PoE).		X			Revised
SR7510	620.12(A)(2)	The word “Communications” has been added in 620.12(A) (2) before “Cables” for clarity. Types of Communications Cables have been eliminated. Through extensive discussion with traveling cable manufacturers minimum wire gauge for communications circuits should be #24 AWG and not #26 AWG.		X			Revised
FR9304	620.21(C)(2)	Code usability is improved by specifically citing the Class 2 cable types. Adding an explicit permission to use substitute cables also promotes code usability because listed communications cables are regularly used as substitutes for Class 2 cables.		X			Revised
FR9309	620.21(B)(2)	Code usability is improved by specifically citing the Class 2 cable types. Adding an explicit permission to use substitute cables also promotes code usability because listed communications cables are regularly used as substitutes for Class 2 cables.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9327	620.21(A)(1)	Code usability is improved by specifically citing the Class 2 cable types. Adding an explicit permission to use substitute cables also promotes code usability because listed communications cables are regularly used as substitutes for Class 2 cables.		X			Revised
SR7515	620.22(A)	Requirements in 620.22(A) have been revised to specify permissible loads on the car light circuit.		X			Revised
SR7530	620.23	The cartop lighting was removed from the lighting branch circuit to lessen the risk to maintenance workers of cartop circuit failure. The term truss interior was not removed as it identifies the structure of moving walkways and escalators.		X			Revised
FR9333	620.36	Permitting a communications limited power cable in the traveling cable accommodates all communications and Class 2 applications including power over Ethernet (PoE). Requiring that the cable be riser rated is appropriate since the application is in a shaft. Since plenum cables are permitted to substitute for riser cables, they are explicitly permitted also.		X			Revised
SR7545	620.36	The requirement that communications conductors comply with Article 800.179 ensures that cable types used will be suitable for the purpose. The addition of shielded pair and coaxial cables for communications purposes allows for the greatest flexibility in installation while maintaining safety.		X			Revised
FR9336	620.37	The section was revised to allow branch circuits identified in 620.24 to be permitted. In addition, main was deleted to align with the defined term for feeder in Article 100. The informational note has been updated to align with the NEC Style Manual Section 3.1.3.1, and 4.1.3.		X			Revised
FR9356	620.51(D)(1)	The requirement for unique identification of disconnecting means where there is more than one driving machine in a machine room will provide greater safety, and harmonizes with ASME A17.1. An informational note was added to point the user for further information on identification of elevator equipment.		X			Revised
SR7549	620.51(A)	Exception No. 2 was modified to identify situations where a cord-and-plug connection is permitted.		X			Revised
SR7558	620.51(D)(2)	Article 620.51 deals with Disconnecting means, so the "it" in 620.51(d)(2) refers to the disconnecting means, not the elevator control panel. This change is needed to clarify that point. Also, if there is a Drive Isolation Transformer between the disconnect and the controller that would		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		impact the marking, so it needs to be on the disconnecting means.					
	625	<i>Electric Vehicle Power Transfer System</i>					
FR9373	625.1	Revised Informational Notes to comply with NEC Style Manual Sections 3.13 and 4.1.3 and updated publication dates. Provided additional Informational Notes for Wireless Charging to Electrical Vehicles and Standards for Installing and Maintaining EVSE.		X			Revised
FR9633	625.2	Deleting the definition of Cable Management in 625 in favor of using the definition in 626.		X			Revised
FR9403	625.4	The revised text provides clarification that the voltages are input voltages only and the output voltages are not specified.		X			Revised
SR7714	625.4	The Exception was revised for clarity and consistency. The term “load management system” was removed and replaced with specific NEC Sections.		X			Revised
FR9413	625.17(C)(2)	Revised the section to clarify the output cable is to the electric vehicle and added WPTE requirements. Replaced ‘electric vehicle supply equipment’ with EVSE for uniformity per NEC Style Manual Section 3.2.3.		X			Revised
FR9474	625.17(A)	Added the term EVSE for clarity and modified it per NEC Style Manual Section 3.2.3. Replaced ‘stationary’ with ‘fastened-in-place’ for consistency, since 625.44(B) is titled ‘Fastened-in-Place Equipment.’ Added the hyphen between ‘power’ and ‘supply’ for consistency.		X			Revised
FR9415	625.22	Revised the section to clarify that PPS is not required for WPTE due to the fact that there is no conductive connection between the equipment and the electric vehicle during WPT.		X			Revised
SR7713	625.22	The Section was revised to require PPS for WPTE. WPTE has cables and components that are typically mounted in areas subject to water and other contaminants. Failures in these cables and components could create a shock hazard. A listed PPS is still needed for WPTE because it is exposed to damp and wet conditions.			X	varies	Clarifies that WPTE also requires PPS
FR9416	625.40	The committee agrees that the individual branch circuit requirement is excessive for Level 1 EVSE, existing 20 ampere circuits will suffice. In addition, the second sentence is entirely redundant to the first sentence requiring an individual branch circuit and deleted.		X			Revised
FR9418	625.41	The requirements in 625.41 were revised to include WPTE as this type of technology is being incorporated into the Article and provide clarity by inserting the term current in front of the term rating Response		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7716	625.42(A)	This section has been revised for the purposes of clarity and consistency with the broader term of Energy Management System to include both load and source.		X			Revised
SRC010	625.42(B)	The Committee Statement indicates that the requirements were removed as they were relocated to Article 750. Without reference to 750.30(C), there are no requirements. The revision corrects this oversight. Second Revision No. 7721-NFPA 70-2021 [Section No. 625.42(B)]		X			Revised
FR9465	625.43	Replaced 'For equipment' with 'EVSE and WPTE' for consistency and added language allowing the disconnecting means to be located either adjacent to or remote from the equipment. In addition, added language requiring a plaque if the disconnect is located remotely.		X			Deleted article
SR7722	625.43	Readily accessible is a defined term. Adjacent and remote are not defined and their use is discouraged by the style manual.		X			Revised
FR9466	625.44(A)	Added language to include the 3-pole 4-wire grounding-type receptacle configuration.		X			Revised
SR7725	625.44(A)	Section revised to allow 14-60R receptacles.		X			Revised
SR7727	625.44(B)	Section revised to allow 14-60R receptacles.		X			Revised
SR7728	625.46	Section revised for clarity.		X			Revised
FR9469	625.48	Replaced 'Systems' with 'Equipment' to more accurately describe the section. Added WPTE to better integrate WPT into Article 625. The last sentence was revised to more accurately depict this type of application. Section 4.1.4 of the NEC Style Manual does not allow references to be made to an entire article. Parts were added to the reference for compliance. Revised Informational Note to comply with NEC Style Manual Sections 3.13 and 4.1.3.		X			Revised
FR9470	625.49	A new section was added to address expansion of EVPE and EVSE functionality within interconnected power systems operating in island mode. This new section clarifies that this equipment can be a source for these types of systems.		X			New section
SR7731	625.54	Section revised for clarity and eliminated confusion.					Revised
	630	<i>Electric Welders</i>		X			
FR9510	630.8	A new section was added after 630.6 to require GFCI protection for personnel for all electric welder applications. Elevated risks exist in areas where welders are used, and this requirement adds the necessary safety.			X	\$ 75	GFCI
SR7585	630.8	The requirement in 630.8 was revised to align with the requirements in 210.8.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9506	630.13	Section 630.13 was revised to allow the use of a listed cord and plug connector as an allowed disconnecting means for welders.		X			Revised
FR9508	630.33	A reference to 110.22(A) was added to point the user to the proper marking requirements for the disconnecting means.		X			Revised
	<i>640</i>	<i>Audio Signal Processing, Amplification, and Reproduction Equipment</i>		X			
FR9207	640.3(B)	Editorial change made to reference the latest edition of NFPA 90A. Revised to align with the NEC style manual Section 3.1.3.1.		X			Revised
	<i>645</i>	<i>Information Technology Equipment</i>					
FR9554	645.5(B)	New list item #3 added along with Info Note #2 to clarify the need for listed and “mated” components Terms were modified for consistency in Article 645. Informational Notes have been revised to align with the NEC Style Manual section 3.1.3.1.		X			New item
FR9234	645.10(A)	Editorial change made to reference the latest edition of NFPA 75. Informational Notes have been revised to align with the NEC Style Manual section 3.1.3.1. The headings have been updated to align with NEC Style Manual 2.1.5.2 Response		X			Revised
	<i>646</i>	<i>Modular Data Centers</i>					
FR9255	646.19	The added language is inserted to ensure that anyone that enters the working space will be able to exit the space in the event of an emergency.		X			Revised
SR7699	646.19	Not all utility room doors are swing-type. Some locations use roll-up doors, and other locations use sliding type doors (door rolls sideways on a track similar to barn doors or pocket doors).		X			Revised
	<i>660</i>	<i>X-Ray Equipment</i>					
SR7592	660.4(A)	The requirements of 660.4(A) were revised to provide clarity by aligning to the proposed definition for “Power-Supply Cord.” Response		X			Revised
SR7593	660.4(B)	The requirements of 660.4(B) were revised to provide clarity by aligning to the proposed definition for “Power-Supply Cord.” Response		X			Revised
SR7594	660.7	The requirements of 660.7 were revised to provide clarity by aligning to the proposed definition for “Power-Supply Cord.” Response		X			Revised
FR9513	660.47(A)	Medium voltage was added to the requirements of 660.47 to clarify the guarding requirements for a specific voltage. This revision is contingent on the acceptance of PI-1695 by CMP-1 to add the definitions for low, medium, and high voltage.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9514	660.48	The requirements in 660.48 were revised to clarify the grounding requirements for battery operated X-ray equipment. The reference to Article 250 was removed to comply with the NEC Style Manual requirement to not reference an entire article.		X			Revised
	<i>665</i>	<i>Induction and Dielectric Heating Equipment</i>					
FR9517	665.11	Section 665.11 was removed as it does not supplement or modify the overcurrent protection requirements in Article 240, but simply repeats that general requirement and to comply with the NEC Style Manual in respect to not referencing an entire article.		X			Deleted section
	<i>670</i>	<i>Industrial Machinery</i>					
SR7648	670.1	The scope in 670.1 is proposed to be revised to include overvoltage protection as pointed out by the correlating committee.		X			Revised
FR9521	670.3(A)	The requirements in 670.3(A) were revised to clarify the location of the machine nameplate and align with the requirement for nameplate marking per NFPA 79 16.4.1. Informational note has been revised to align with the NEC Style Manual 3.1.3.1.		X			Revised
FR9522	670.4(B)	An informational note was added to 670.4(B) to inform the user of this code to consider designing in safety for voltage testing at machine disconnecting means. It also points the user to NFPA70E which holds the purview over acceptable testing options.		X			Revised
SR7654	670.4(B)	The second sentence of the informational note in 670.4(B) was deleted as there are multiple methods of verifying absence of voltage and the pointer to NFPA 70E is all that is necessary. The informational note was revised to clarify the application of NFPA 70E.		X			Revised
FR9578	670.6	The term overvoltage was added to the first sentence of 670.6 to clarify the protection required. A new second sentence was added to require surge protective devices to be listed and installed per Article 242 Part II when they are used to provide overvoltage protection.		X			Revised
SR7644	670.6	The last sentence of 670.6 was deleted as article 242 already requires listing and the requirements of Ch 1-4 are not necessary to repeat per the NEC Style manual 4.1.1.		X			Revised
	<i>680</i>	<i>Swimming Pools, Fountains, and Similar Installations</i>					
FR8760	680	The title of Article 680 Part IV is being revised to provide clarity and align with the types of spas and hot tubs that are covered in this part.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8530	680.3	Section 680.3 Approval of Equipment requires equipment to be listed. Section 350.6 states that LFMC fittings shall be listed. Section 356.6 states that LFNC fittings shall be listed. Therefore, including “with listed fittings” is redundant and unnecessary, and is being removed from existing Section 680.21(A)(2).		X			Revised
FR8418	680.5	The first sentence of Section 680.5 is deleted, as these GFCI types are already permitted by the NEC.		X			Revised
SR8377	680.5	Revisions to 680.5 Title and items (A) and (C) to indicate GFCI and SPGFCI more accurately depict the requirements covered in this section and align with the new definition of SPGFCI in Article 100.		X			Revised
SR8381	680.5(B)	The exception is being added to clarify that receptacles and outlets below the low voltage contact limit are not required to be protected by a GFCI. The term “equipment” is being used instead of “system”, as proposed in the public comment, because “equipment” is a defined term.		X			Revised
FR8463	680.6	Section 680.6 Bonding and Equipment Grounding is deleted.		X			Revised
SRC064	680.9(A)	The revision is made to remove a defined term which could create confusion in the requirement. The term “enclosed” is used incorrectly in the context of the requirement. Second Revision No. 8385-NFPA 70-2021 [Section No. 680.9(A)]		X			Revised
FR8433	680.10	Section 680.10 title was revised, and heat pumps and chiller equipment have been added to the article to address new technology that is being added to pool installations. Section 680.10 is also revised into subparts (A) and (B) for clarity.		X			Revised
FR8441	680.11(A)	Section 680.11(A) is being revised to clarify that these wiring methods are acceptable, when installed as a complete system.		X			Revised
FR8442	680.11	Item (C) is deleted from Section 680.11, as this text does not supplement or modify the minimum cover requirements in Table 300.5, but simply repeats that general requirement. NEC Section 90.3 states that Chapters 1-4 apply generally. Opening paragraph of Section 680.11 (C) is changed to refer to items (A)-(B) instead of (A)-(C).		X			Revised
FR8957	680.12	Section 680.12 is separated into subsections (A) and (B) to more clearly indicate the requirements that apply.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8400	680.14(A)	Aluminum electrical metallic tubing is similar to, but less robust than, aluminum conduit and has not been determined to be suitable for a swimming pool corrosive environment. The first draft text prohibited conduit but not tubing. This revision adds tubing to the prohibited items in this section.		X			Revised
FR8611	680.21	Section 680.21(A)(1) has been deleted.		X			Deleted section
FR8756	680.21(D)	Section 680.21(D) is revised to refer to the revised Section 680.5 for ground-fault protection requirements. To enhance safety, the section has been revised to require that when a pool pump motor is removed for repair, it shall be provided with groundfault protection.		X			Ensure GFCI is included
SR8402	680.21(D)	The wording in 680.21(D) is being revised to clarify that the requirement applies to any situation where a pool pump motor is replaced or repaired.		X			Revised
SR8411	680.22(A)(4)	Revisions are made to first level subdivision list item (4) to indicate GFCI and SPGFCI, which more accurately depicts the requirements covered in this subdivision. This aligns with the new definition of SPGFCI in Article 100.		X			Revised
SR8412	680.22(B)(4)	Revisions are made to first level subdivision list item (4) to indicate GFCI and SPGFCI which more accurately depicts the requirements covered in this subdivision. This aligns with the new definition of SPGFCI in Article 100.		X			Revised
FR8482	680.23(B)(2)	Section 680.23(B)(2) is being revised to add clarity by specifying the intent of nonmetallic conduit to mean polyvinyl chloride conduit.		X			Revised
SR8427	680.23(B)(2)	680.23(B)(2) is being revised to clarify that both stainless steel conduit and red brass conduit are required to be listed. UL 6A Standard covers listing criteria for red brass and stainless steel conduit.		X			Revised
FR9104	680.24(B)	Section 680.24(B)(1) Item (3) is being revised to correlate with existing requirements in Section 300.5(G), Raceway Seals. The term "approved" is being removed as Section 110.2 requires equipment to be approved, and Section 680.3 requires listing. The term "duct seal" is being removed since other sealing compounds may be used.		X			Revised
FR8412	680.25	Section 680.25 has been deleted. Section 680.14 Corrosive Environments is a general requirement in Part I and applies to permanently installed pools, so the reference has been removed. The equipment grounding conductor requirement has been relocated to 680.7. The reference to Chapter 3 is deleted as Section 90.3 Code Arrangement states that Chapters 1-4 apply generally.		X			Deleted section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		The restriction for aluminum conduit has been relocated to 680.14.						
FR9106	680.26(B)(2)	Revisions are being made to Sections 680.26(B)(2)(b)(5) and 680.26(B)(2)(c)(4) to clarify the depth of the perimeter bonding conductors as measured between the conductor and finished grade. The term “finished grade” was used in lieu of “grade” or “subgrade”, as it is more clearly understood. As used in context of this article, “finished grade” is considered the top surface or walking surface.		X				Revised
SR8616	680.26(B)(2)	A spelling correction for the word “finished” is being made in 680.26(B)(2)(b)(5). CMP-17 reaffirms that a copper bonding grid is not substantiated for perimeter bonding to the exclusion of other alternate means presently permissible. No new substantive technical information was submitted to indicate the existing methods are inadequate.		X				Revised
FR8419	680.31	Equipment grounding requirements are relocated to 680.7(B) Grounding and Bonding for clarity, usability, and to eliminate redundant language throughout Article 680. “Ground fault circuit interrupter” is replaced with the acronym “GFCI”. Section 3.2.3 of the NEC Style Manual permits the use of acronyms.		X				Revised
FR8516	680.32	The words in the title have been changed from “Ground Fault Interrupters” to “Ground-Fault Protection” to address all ground-fault protection. Requirements have been expanded to include all 125-volt through 250-volt receptacles up to 60 amperes as the hazards for these receptacles are similar to 125-volt, 20 ampere receptacles. The section is revised to refer to the revised Section 680.5 for ground-fault protection requirements.			X	\$ 100		Safety
FR8517	680.32	Section 90.3 states that Chapters 1-4 apply generally, therefore the informational note is not necessary.		X				Revised
SR8414	680.32	Revisions are made to 680.32 to indicate GFCI and SPGFCI, which more accurately depicts the requirements covered in this section. This aligns with the new definition SPGFCI in Article 100. Also, the word “required” was removed from the title of this section for consistency with other areas in Article 680 addressing GFCI and SPGFCI requirements.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
				Sub Code:				
FR8751	680.41	Requirements for location of equipment exceeding the low voltage contact limit are being added to Part IV, Section 680.41(B) and Part V, Section 680.50(B), to be consistent with same requirements for pools in Part II, Section 680.22(E). Also, Section 680.41 title was revised, and both Sections 680.41 and 680.50 were revised into subdivisions A and B to accommodate the added requirements.		X				Revised
SR8433	680.41(A)	An editorial revision is being made to 680.41(A) to clarify that the emergency switch requirement does not apply to one-family dwellings, regardless of whether the Hot Tub or Spa is indoors or outdoors.		X				Revised
FR8553	680.43(A)	The words in the title have been changed from "GFCI" to "Ground-Fault" to address all ground-fault protection. Requirements have been expanded to include all 125-volt through 250-volt receptacles up to 60 amperes as the hazards for these receptacles are similar to 125-volt, 20 ampere receptacles. The section is revised to refer to the revised Section 680.5 for ground-fault protection requirements. Section 680.42(A)(3): Receptacles are limited to 150V to ground to allow use of the more protective GFCI class devices.			X	\$ 80		Safety
SR8416	680.43(A)(2)	Revisions are made to first level subdivision list item (2) to indicate GFCI and SPGFCI, which more accurately depicts the requirements covered in this subdivision. This aligns with the new definition of SPGFCI in Article 100.		X				Revised
FR8609	680.44	The section is revised to refer to the revised Section 680.5 for ground-fault protection requirements. Existing Section 680.44(B) has been deleted because it is no longer applicable due to new ground-fault protection technology.		X				Revised
SR8614	680.44	Revisions are made to 680.44 title and 680.44(A) to indicate GFCI and SPGFCI, which more accurately depicts the requirements covered in this section. This aligns with the new definition of SPGFCI in Article 100. To simplify 680.44(B), the term "a listed, labeled, and identified..." is being shortened to "a listed...", but is being retained to clarify that it applies to both types of equipment.		X				Revised
FR8752	680.50	Requirements for location of equipment exceeding the low voltage contact limit are being added to Part IV, Section 680.41(B) and Part V, Section 680.50(B), to be consistent with same requirements for pools in Part II, Section 680.22(E). Also, Section 680.41 title was revised, and both Sections 680.41 and 680.50 were revised into		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		subdivisions A and B to accommodate the added requirements.					
FR8578	680.54(C)	New Section 680.54(C) clarifies the portion of a splash pad that is required to have equipotential bonding.		X			Revised
SR8438	680.54(C)	To improve clarity, the requirements have been placed in two sentences instead of one and a comma has been added.		X			Revised
FR8539	680.58	Requirements have been expanded to include all 125-volt through 250-volt receptacles up to 60 amperes as the hazards for these receptacles are similar to 125-volt, 20 ampere receptacles. The section is revised to refer to the revised Section 680.5 for ground-fault protection requirements.			X	\$ 100	Shock hazards
SR8424	680.58	Revisions are made to 680.58 to indicate GFCI and SPGFCI which more accurately depicts the requirements covered in this section. This aligns with the new definition of SPGFCI in Article 100.		X			Revised
FR8582	680.59	Section 680.59 was revised to clarify conditions under which permanently installed nonsubmersible pumps require ground-fault protection and to address GFCI voltage limitations. The title has been changed from "GFCI" to "Ground-Fault" to address all ground-fault protection. The section is revised to refer to the revised Section 680.5 for ground-fault protection requirements. An exception has been added for pumps operating at or below the low-voltage contact limit.		X			Revised
SR8425	680.59	Revisions are made to 680.59 to indicate GFCI and SPGFCI which more accurately depicts the requirements covered in this section. This aligns with the new definition of SPGFCI in Article 100.		X			Revised
FR8610	680.60	The informational note in Section 680.60 has been deleted. An informational note shall not contain a requirement.		X			Revised
FR8425	680.62(D)	Section 680.62(D)(2) is deleted. Section 90.3 states that Chapters 1-4 apply generally so a reference to Article 250 is unnecessary. With the deletion of 680.62(D)(2), 680.62(D)(1) is editorial revised to comply with the NEC Style Manual and to improve clarity.		X			Revised
FR8764	680.62(E)	The section is revised to refer to the revised Section 680.5 for ground-fault protection requirements.		X			Revised
FR8598	680.74(A)	Exception No. 3 is being added to clarify additional specific items that are not required to be bonded.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8601	680.83	The present requirements in Section 680.83 do not indicate the method of bonding, only the parts that need to be bonded by reference back to Sections 680.26(B)(5) and (B)(7). Section 680.83 is being revised to add clarification as to methods of bonding. "Equipotential" is being added to the title of Section 680.83 for clarity.		X			Revised
	682	<i>Natural and Artificially Made Bodies of Water</i>					
SR8367	682	Artificially Made Bodies of Water.		X			Revised
FR8697	682.11	The current wording only applies to service equipment that feeds floating structures and submersible electrical equipment. Feeder panels and electrical distribution equipment that does not supply power to floating structures or submersible electrical equipment were exempt from the requirements of this section. The hazard is the same whether or not the distribution equipment feeds equipment in the body of water. This revision now requires all distribution equipment to be located a safe distance from the body of water. The last sentence was deleted because the datum plane is 2 ft. above the high-water level. This section requires the equipment to be located one foot above that, which would require the equipment to be three feet above the high-water level.			X	varies	Safety
FR8704	682.15	Listing is necessary to ensure that ground-fault protection devices properly perform.		X			Revised
FR8705	682.30	Article 553 no longer exists. Reference to Section 555.54 directs users to appropriate grounding rules related to floating buildings which are now contained in Part III of Article 555.		X			Revised
FR8706	682.31	This section was revised to include a new 682.31(A) to clarify what must be connected to the equipment grounding conductor. The remainder of the sections were renumbered appropriately. Section 682.31(E) adds clarity by identifying that this requirement does not apply to appliances that are double-insulated. An exception was added to recognize that an insulated EGC is not required if listed assembly is used in areas other than those that demonstrate the need for such an insulated conductor.		X			Revised
SR8319	682.31(A)	Editorial revision is being made to remove the word "items", as it adds no clarity to the requirement.		X			Revised
	690	<i>Solar Photovoltaic (PV) Systems</i>					
FR9631	690.2	This definition is deleted as, while a dc-dc output circuit can be clearly identified and is used for ampacity calculations, the input to a dc-dc converter may have many other functions (such as a PV source circuit), and is generally not used for ampacity calculations.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9632	690.2	There is no longer any need for this definition so it is deleted. PV source circuits, and the requirements for those, are adequate to describe the dc circuits energized by PV cells. A new definition for PV string circuits has been added for clarity where some unique conditions and requirements exist. Requirements are simplified if all PV module connected wiring is considered to be a source circuit.		X			Revised
FR9199	690.4(G)	Like all electrical equipment, PV equipment installed on floating structures are likely to be exposed to unique environmental and mechanical conditions.		X			New section
FR9204	690.4(B)	The new definition of electronic power converters allows for the removal of all the items on the list that are covered directly by the definition. Items related PV hazard control are added.		X			Revised
FR9209	690.4(C)	These changes align with the definition of qualified persons and includes maintenance as part of any operations.		X			Revised
FR9210	690.4(F)	Deleting “exterior” clarifies that inverters may be installed in non-readily accessible areas in indoor locations as well as outdoor locations.		X			Revised
FR9437	690.8(A)(1)	This change deletes list items for circuit definitions that are deleted in other sections of Article 690.		X			Revised
FR9439	690.8(D)	These changes are related to the changes to PV dc circuit terms addressed in this article. These changes further clarify how the requirements in this section are applied to conductors connected to PV modules ahead of an overcurrent device, commonly called strings and now included in a new definition for PV string circuit.		X			Revised
FR9219	690.9(D)	Section 705.30(C) addresses the requirements for transformers and is applicable to connections where there are multiple sources.		X			Revised
FR9441	690.9(B)	This change constrains the requirement of PV-rated overcurrent devices in a PV system to PV source circuits. Since a specific PV rating as applied to overcurrent devices is unique for circuits directly connected to PV cells, this change excludes dc-todc converter circuits that do not have the same characteristics as PV source circuits.		X			Revised
FR9220	690.10	The section is deleted as Article 710 applies to these systems without the need to refer to it.		X			Deleted section
FR9229	690.12(A)	This revision clarifies the interface between the PV circuits and a building to determine whether controlled conductor requirements apply.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
FR9235	690.12(B)(2)	This revision provides a simple option to reduce shock hazards for fire fighters by limiting voltage inside the array and inside the equipment. The option provided by 690.12(B)(2)(3) is no longer applicable with the first two options. The design either falls within option 2 or option 1 as a listed PV hazard control system. Therefore, this option is deleted since there is not enough criteria specified to determine an adequate PVHCS		X				Revised
FR9239	690.12(B)	This additional language clarifies that products, such as those listed as rapid shutdown equipment (RSE), can be used to provide the necessary functions for the requirements within the array boundary [690.12(B)(2)] and those outside the array boundary[690.12(B)(1)].		X				Revised
FR9246	690.12(C)	This additional language clarifies that initiation devices are only required when the installation requires a rapid shutdown function. No such device is necessary when the function is not required for the PV system.		X				Revised
FR9247	690.12(D)	The requirement for listed rapid shutdown equipment and system is deleted from 690.12(D). Section 690.4(B) addresses PV equipment and certification requirements.		X				Revised
FR9278	690.12	New Exception No. 2 is aligned with an existing exception to requirements for firefighter roof top access and pathways in the building and fire codes. The proposed text regarding the types of installations that do not require rapid shutdown was added to the informational note to provide supplemental clarification per the style manual.	X			varies		Consistency with fire codes
SR8332	690.12(C)	Language regarding outdoor location is harmonized with language in Article 230. The informational note was removed as it is no longer necessary and does not improve clarity.		X				Revised
FR9263	690.13(C)	The reference to an interactive system is removed since the inclusion of this term in this sentence is unnecessary to apply the requirements and its presence could cause confusion.		X				Revised
FR9273	690.15(D)	The first level subdivision numbering has been changed to move this section from (D) to (A) to improve the application of this section.		X				Revised
FR9280	690.31(B)	This section has been reorganized and edited for clarity.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9282	690.31(C)(1)	This section subdivision has been reorganized into a list to provide improvements in the application of these requirements. An allowance for greater support distances for larger single conductors has been provided to align with similar requirements in Article 338.10(B)(4)(b) that were referenced in earlier versions of this Code. The existing exception was moved to correctly apply only to new (a). Text within the informational note is moved to the charging paragraph of 690.31(C).		X			Revised
FR9283	690.31(C)(2)	Units have been updated to align with other units used in this section.		X			Revised
FR9285	690.31(D)	Rapid shutdown requirements in 690.12 control conductors located within buildings.		X			Revised
FR9286	690.31(G)	The industry trend of 1500 Vdc PV arrays located near buildings creates a need to clarify requirements applying to ground-mounted arrays interfacing with buildings.		X			New section
FR9287	690.41	This section is modified to focus on DC circuit grounding.		X			Revised
FR9288	690.41(B)	This revision clarifies that PV GFDI is different than ground-fault protection used elsewhere in the Code. Detector/interrupter has been added to match UL 1741 definition.		X			Revised
FR9289	690.42	New Section 690.42(A) focuses on the more common application of functionally grounded systems which are grounded through Ground-Fault protection. New section 690.42(B) focuses on solidly grounded circuits which are grounded differently than those in (A). This section clarifies that the grounding connection can be made to any point on the grounding electrode system which aligns with similar guidance / requirements found in Article 250.		X			New section
FR9290	690.43(A)	The 2nd sentence is deleted because the product listing described in the informational note will define relevant uses for the devices and whether a device has been evaluated for the purpose of bonding adjacent PV modules.		X			Revised
FR9292	690.43(C)	This revision makes it explicit that equipment grounding conductors may be run separately within the array. It clarifies that where conductors leave the vicinity of the array, the EGCs shall comply with 250.134. This requirement prevents over-strict interpretation for wiring transitions because 250.134 appropriately allows for EGCs to be run separately from circuit conductors in dc circuits. The title is changed to "location" as it is no longer specific to EGCs run with circuit conductors.		X			Revised
SR8635	690.47(B)	At the request of the Correlating Committee task group on this subject, the language is reverted to the 2020		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		edition language. The Correlating Committee will be establishing a task group to address this issue for the 2026 edition.					
FR9589	690.55	The provisions for marking polarity on PV system dc circuit conductors are adequately addressed in Section 690.31(B)(1), and in many cases the connection between PV and ESS occurs on the ac side, in which case polarity as specified in 690.55 and 690.31(B)(1) are not relevant and other requirements and conventions apply.		X			Revised
FR9297	690.72	The reference to 706.33 is incomplete as this allowance for specific PV equipment applies more generally to the charging of batteries in any application.		X			Revised
	<i>691</i>	<i>Large-Scale Photovoltaic (PV) Electric Supply Stations</i>					
FR9299	691.1	This revision removes “stations with an inverter generating capacity of no less than 5000 kW” from the scope. The threshold is moved to 691.4 Informational Note No.1 was revised to help users understand where the special requirements that make up a large-scale system are located.		X			Revised
FR9301	6391.1	The figure shows a connection to the distribution network. Many power stations connect to subtransmission or transmission systems. A more accurate term is medium or high voltage network. The title was revised to remove the word “figure”.		X			Revised
FR9302	691.4	The original language was not intended to imply any modification to 110.31. This First Revision clarifies that 110.31 applies to the entire PV electric supply station.		X			Revised
FR9303	691.4(6)	This revision addresses the removal of the 5,000 kW threshold in the scope with two items in the expanded scope of 691.4. The revision includes an informational note to address systems between 2,000 and 5,000 kW that are part of a group of facilities being operated as a larger power station.		X			Revised
FR9306	691.9	This change modifies the first sentence in Section 691.9 to refer to any type of disconnection of equipment.		X			Revised
	<i>694</i>	<i>Wind Electric Systems</i>					
FR9485	694.1	The title of the figure has been modified to clarify that it is not part of the mandatory text by adding “informational note” to the start of the title. Figure 694.1(B) is deleted as it contains equipment that is not part of a wind electric system and therefore could cause confusion in the application of this article with other articles.		X			Revised
FR9329	694.7	This change provides clarity that not only do wind electric systems need to be constructed by qualified persons,		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		these systems should also be maintained by qualified persons.						
FR9330	694.7(B)	This change is in response to the emergence of off-shore wind installations that need additional requirements with respect to environment and accessibility.		X				Revised
FR9332	694.7(B)	The Standard for Wind Turbines Permitting Entry of Personnel, UL 6141, and the Standard for Small Wind Turbine Systems, UL 6142 were specifically written to address wind turbine equipment for the US market considering installation within the scope of the NEC and NESC.		X				Revised
SR8352	694.7	New text in 694.7(A) and in the informational note to (B) address the locations where these system are installed. Some text in 694.7(B) is removed as it is redundant with general requirements in Article 110.		X				Revised
FR9340	694.50	This revision is submitted in conjunction with the related revision to move the marking requirement now located in 694.50 to a more appropriate location in 705.14.		X				Revised
FR9341	694.54	With the changes made to other articles, a single reference to this section is necessary. These references have been consolidated in Section 705.10.		X				Revised
FR9344	694.68	New organization of these articles makes it clear that all sources that are combined with other sources must be installed in accordance with Article 705.		X				Revised
	<i>695</i>	<i>Fire Pumps</i>						
FR9007	695.1(B)	Informational Note to 695.1(B)(2) has been revised to conform with the Style Manual 3.1.3.1 and 4.1.3.		X				Revised
SR8065	695.1	The requirements in 695.10 for reconditioned equipment have been moved to a new 695.2 for consistency of location of requirements. The term “shall not be permitted to be” has been revised to “shall not be” for clarity.		X				Revised
SR8066	695.2	The requirements in 695.10 for reconditioned equipment have been moved to a new 695.2 for consistency of location of requirements. The term “shall not be permitted to be” has been revised to “shall not be” for clarity.		X				New section
FR9072	695.3(A)(3)	The present requirement in 695.3(A)(3) permits a dedicated feeder derived from a service connection as described in 695.3(A)(1).		X				Revised
SR8063	695.3(l)	The term “shall not be permitted to be” has been revised to “shall not be” for clarity.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9010	695.6(A)(2)	The language is revised to reflect the proper title of the standard and deleting the reference to ANSI. The revision correlates information on circuit integrity cable throughout the NEC. Revised the information notes to conform with the Style Manual 3.1.3.1 and 4.1.3.		X			Revised
FR9014	695.6(D)	The restructuring of the section improves clarity, requires fitting to be listed for wet locations. In addition, the revision identifies the extracted sections from NFPA 20.		X			Revised
FR9016	695.6(H)	“Ceiling” has been added to identify the entire fire pump room must be fire-rated.		X			Revised
SR8064	695.6(D)(3)	The term “shall not be permitted to be” has been revised to “shall not be” for clarity.		X			Revised
FR9020	695.15	The title of 695.15 is correctly identified as Surge Protection. “Surge protection device” has been revised to “surge protective device” (SPD). An exception has been added to clarify that surge protection is not required in a diesel fire pump controller.		X			Revised
SR8062	695.15	UL 1449 (5th edition) provides guidance on the different types of SPD and the appropriate use of those types. 10.4.1.1 of NFPA 20 does not specify the Type of SPD required.		X			Revised
Chapter 7: Special Conditions							
FR9142	global	CMP-13 reviewed the Articles under its purview and made appropriate changes per the global Public Input # 3330.		X			Revised
	<i>700</i>	<i>Emergency Systems</i>					
FR8773	700.1	A reference to NFPA 111 is added to correlate with other actions to align NFPA 110, 111 and 70. This clarifies that emergency systems are considered level one systems when applying NPFA 110. Info notes were renumbered accordingly. Revisions to the informational notes are made to comply with sections 3.1.3.1 and 4.1.3 of the NEC Style Manual.		X			Revised
SR7928	700.2	Deleted the reconditioning statement from 700.5(C) and relocated to new section 700.2 as requested by the correlating committee. Also, changed the “shall not be permitted to be” to “shall not be” in accordance with the style manual.		X			New section
FR8784	700.3(A)	Revisions are made to clarify that the emergency system must be commissioned prior to being placed into active service.		X			Revised
FR8786	700.3(F)	This revision recognizes that permanent switching means required by 700.3 (F) to connect a portable or temporary alternate source of power has the responsibility to function as a transfer switch as noted in 700.3 (F) (2).		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7939	700.3(A)	The words “and testing” are redundant and therefore are being removed from the requirement.		X			Revised
FR8790	700.4(B)	The addition of this new second sentence addresses the common condition where facilities relying on emergency systems have variable loads that can also have significant transient high-power conditions such as motor starting. This text makes it clear that these conditions must be taken into account when sizing the minimum capacity of these systems.		X			Revised
FR8791	700.4(C)	This action removes "peak load shaving" from this first level subdivision as the requirements for parallel sources are now addressed in a new 700.4(D) titled "Parallel Operation". The application of peak load shaving is just one use case for these systems while operating in parallel with a normal source. The allowance for parallel operation of emergency sources to satisfy the test requirements in 700.3(B) has been moved without modification into the proposed new 700.4(D).		X			Revised
FR8792	700.4(D)	This new first level subdivision clarifies that there are two distinctly different types of parallel operation.		X			New section
SR7949	700.4(C)	The title of 700.4(C) has been modified so that it doesn't include functions from the actual requirement, and that it does include the proper level of abstraction along with the use of common terminology. This will improve consistency in the code. The requirement has been modified to include the common terminology while retaining the extremely important functional context that's needed.		X			Revised
FR8794	700.5(B)	Installations where the emergency loads are served by a single transfer switch must have provisions to bypass the switch so that maintenance of the transfer switch can be performed. The exceptions to this requirement provide reasonable accommodation for installations where the site conditions or mitigation actions address the safety aspects during these activities.		X			Revised
FR8796	700.5(D)	This informational note helps users understand that systems with multiple power sources often have transfer equipment associated with source interconnection or paralleling. Transfer equipment installed for these purposes is not used to separate emergency loads from other load types as required by this section.		X			Revised
SR7952	700.5	The 700.5 article structure for transfer equipment has been modified so that subsections mirror the subsections for transfer equipment in article 708.24.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8798	700.6(C)	The title of this first level subdivision is revised to better describe the functional area of the alarm signal. Additionally, the requirement was changed to align with the focus on battery charging and potential impact to source readiness.		X			Revised
FR8808	700.6	This revision now clarifies where signals are required. The word “practicable” is deleted and replaced with “applicable”. This mandates that signals be provided where they are applicable to the source. See action taken on PI-2801 and PI-3507 on 700.10(D)(4).		X			Revised
FR8802	700.8	This requirement is logically expanded to include surge protection for switchgear in Emergency Systems.		X			Revised
FR8801	700.9	Cybersecurity is an aspect of safety and reliability in addition to the other factors affecting emergency systems and must be addressed in this code. An attack can affect the emergency control system, individual sensors or other IoT devices to the point of either preventing normal operation or displaying the appearance of normal operation while failing the system conditions. Examples of these unsafe conditions include but are not limited to, changing overcurrent protection settings, generator controls, SCADA systems, emergency stop functions, motor controllers, or fire protection systems.		X			New section
SR8077	700.9	While Panel 13 agrees that cybersecurity is an important aspect of overall system reliability, the requirements are better suited in Article 110 to encompass this code as outlined in 90.3.		X			Revised
FR8803	700.10(B)	Emergency circuits for lighting in an elevator must be installed in the same traveling cable to an elevator car. This revision recognizes standard industry practice. Revisions to the informational note are made to comply with sections 3.1.3.1 and 4.1.3 of the NEC Style Manual.		X			Revised
FR8805	700.10(D)(2)	The informational notes are revised to reflect the proper title of the standards and compliance with the NEC style manual. The reference to ANSI is deleted and the permitted methods to protect the cables are provided in an informational form.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8807	700.10(D)(4)	The requirements of 700.10(D)(4) have been revised to provide clarity that the control conductors from all approved emergency power sources have to meet the requirements of 700.10(D)(2) and be kept entirely independent of all other wiring. The loss of integrity of the control wiring for all emergency power sources shall also be monitored for any malfunctions, and losses in integrity should signal a system malfunction and start the associated emergency source.		X			Revised
SR8000	700.10(B)	A new subsection has been added to 700.10(B)(6) with the proper requirement to cover cases for standby or alternate power sources that supply mixed loads with multiple overcurrent protective devices. This was done to improve clarity and useability of the code.		X			Revised
FR8818	700.11	Driven by the availability of new technologies such as Power over Ethernet and low-power consumption LED luminaires, a new type of emergency lighting system has emerged in the last three years.		X			New section
SR7991	700.11(C)	Separation of Class 2 circuits from other circuit types is well defined in the previous edition of the code 725.136, but this section has been moved to 722.141, so this reference has been updated. Separation of Class 2 circuits used for different purposes, however, is not defined so 700.11(C) was updated to clearly define acceptable methods.		X			Revised
SR7992	700.11(D)	Separation of circuits does provide additional integrity to the emergency lighting system in so far as it prevents collateral damage during maintenance activities and is not an onerous requirement.		X			Revised
SR7994	700.11(B)	A mathematical error was identified in the unit conversion for 700.11 (B)(2) which was corrected. The phrasing of the requirement was also simplified for easier code comprehension and to comply with the NEC Style Manual.		X			Revised
FR8820	700.12(B)	This revision provides correlation with the requirements in 700.10(D)(1)(2). Revisions to the informational notes are made to comply with sections 3.1.3.1 and 4.1.3 of the NEC Style Manual.		X			Revised
FR8827	700.12(E)	These changes are intended to expand what can be utilized for the newly defined storedenergy power supply systems (SEPSS) to include a number of different technologies that are currently available and can be used for this application including UPS, fuel cell systems, ESS, storage batteries for DC loads and an "other" option since these technologies may not represent an all-inclusive list.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8843	700.12	The requirements in 700.12(D)(2) are moved to 700.12(C) to correlate with a revision to that section.		X			Revised
FR8844	700.12(D)(1)	Normal service implies that the normal or primary power source can only be a utility per the NEC definition of “service.” This section was revised to say “power source” to allow other types of sources for the normal power. This revision also harmonizes with NFPA 110.		X			Revised
FR8848	700.12(I)	The NEC has long been silent on Battery Equipped Emergency Luminaires, which are now in common use. This revision recognizes this equipment. This revision removes construction and performance requirements for Battery Equipped Emergency Luminaires, which is properly covered by their listing under UL924. See also definitions added in response for PI 2203. A new IN No. 2 is added to provide clarity by explaining that unit equipment is a type of battery-equipped emergency luminaire.		X			Revised
FR9195	700.12(H)	This first level subdivision is modified to recognize that there are different types of microgrids, in addition to any that might be categorized as dc only.		X			Revised
SR7995	700.12(C)	The informational note was added to provide clarity and point users to NFPA 110 for the various classifications of EPSS.		X			Revised
SR7999	700.12(H)(2)	The panel agrees with the term “unit equipment” for clarity as it is a defined term, but does not want to limit to unit equipment in (5) and (6).		X			Revised
FR8853	700.17	This revision clarifies that it is acceptable to monitor the normal supply in a given area rather than each individual branch circuit for that area.		X			Revised
SR8002	700.23	The word “power” is added to correlate with defined terms for clarity.		X			Revised
FR8857	700.24	This section was modified to acknowledge that a directly controlled luminaire can be energized to an emergency lighting level in two ways, each of which dictates a different listing requirement for the luminaire itself: 1.		X			Revised
FR8856	700.27	The UL924 standard makes it clear that a PoE switch or similar device that combines control and class 2 power on a single circuit qualifies as an Emergency Lighting Control Device (ELCD).		X			New section
FR9113	700.32	The parent text is modified for clarity with respect to overcurrent protective devices (OCPD’s) and the words “load-side” are added in (A), (B), and (C) to clarify that selective coordination must be analyzed both upstream and downstream. This revision clarifies existing requirements where emergency standby system OCPD’s		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		are replaced, modified, added or deleted. This is done to ensure that selective coordination with all supply-side and load-side OCPD's is maintained.						
	<i>701</i>	<i>Legally Required Standby Systems</i>						
SR8009	701.2	There isn't a practical method to ensure that a transfer switch can properly be reconditioned without testing it to destruction. Deleted the reconditioning statement from 701.5(C) and relocated to new section 701.2 as requested by the correlating committee.		X				New section
SR8005	701.3(A)	The word "testing" has been removed as it is included in the definition of commissioning.		X				Revised
FR8869	701.4(B)	The addition of this new language addresses the common condition where facilities relying on legally required standby systems have variable loads that can also have significant transient high-power conditions such as motor starting. This language makes it clear that these conditions must be taken into account when sizing the minimum capacity of these systems.		X				Revised
FR8874	701.4(D)	This new first level subdivision clarifies that there are two distinctly different types of parallel operation		X				New section
FR8875	701.4(C)	This action removes "peak load shaving" from the title since the requirements for parallel sources are addressed in a proposed new section 701.4(D) titled "Parallel Operation". The application of peak load shaving is just one-use case for these systems while operating in parallel with the normal source.		X				Revised
SR8008	701.5(C)	There isn't a practical method to ensure that a transfer switch can properly be reconditioned without testing it to destruction. Deleted the reconditioning statement from 701.5(C) and relocated to new section 701.2 as requested by the correlating committee.		X				Revised
FR8880	701.9	Cybersecurity is an aspect of safety and reliability in addition to the other factors affecting legally required systems and must be addressed in this code.		X				New section
SR8011	701.9	While Panel 13 agrees that cybersecurity is an important aspect of overall system reliability, the requirements are better suited in Article 110 to encompass this code as outlined in 90.3.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8881	701.10	This revision provides correlation with 700.10(B)(5)(b). Legally required systems are installed to supply loads, such as heating and refrigeration systems, communications systems, ventilation and smoke removal systems, sewage disposal, lighting systems, and industrial processes, that, when stopped during any interruption of the normal electrical supply, could create hazards or hamper rescue or fire-fighting operations. Therefore, it is necessary to require a limited level of selective coordination where legally required systems are installed in accordance with this revised requirement.			X	\$ 1,200	Resilience
FR8886	701.12(E)	This revision expands what can be utilized for the newly defined stored-energy power supply systems (SEPSS) to include a number of different technologies that are currently available and can be used for this application including UPS, fuel cell systems, ESS, storage batteries for DC loads and an “other” option since these technologies may not represent an allinclusive list.		X			Revised
FR8891	701.12(I)	This section is modified to recognize that there are different types of microgrids, in addition to any that might be categorized as dc only.		X			Revised
FR8893	701.12(J)	The requirements for unit equipment applied in a legally required system are modified to very simply apply 700.12(I). This revision is necessary to correlate this requirement with revisions made in this and previous NEC cycles.		X			Revised
FR8965	701.12(D)	Normal service implies that the normal or primary power source can only be a utility per the NEC definition of “service.” This section was revised to say “power source” to allow other types of sources for the normal power.		X			Revised
FR8969	701.12(H)	The requirements in 701.12(H) for fuel cell systems are addressed in the revised 701.12(E) for stored energy power supply systems. See FR-8886.		X			Revised
SR8012	701.12(C)	The informational note was added to provide clarity and point users to NFPA 110 for the various classifications of EPSS.		X			Revised
FR8895	701.32	The parent text is modified for clarity with respect to overcurrent protective devices (OCPD’s) and the words “load-side” are added in (A), (B), and (C) to clarify that selective coordination must be analyzed both upstream and downstream. This revision clarifies existing requirements where legally required standby system OCPD’s are replaced, modified, added or deleted. This is done to ensure that selective coordination with all supply-side and load-side OCPD’s is maintained.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
	702	<i>Optional Standby Systems</i>					
SR8024	702.2	Deleted the reconditioning statement from 702.5(B)(1) and relocated to new section 702.2 as requested by the correlating committee. Also, changed the “shall not be permitted to be” to “shall not be” in accordance with the style manual.		X			New section
FR8904	702.7(A)	This revision adds signage requirements for multifamily housing as it is necessary for first responders and maintenance personnel.			X	\$ 100	Safety
SR8032	702.7(A)	The changes provide clarity, usability, and consistency of defined terms for service equipment. The cross reference has been corrected, because what was previously in 445.18(D) is now located at 445.19(C).		X			Revised
FR8907	702.12(B)	There is no practical reason to permit inlets or other connections indoors for portable generators. This will help to ensure that cables are not run through openings in buildings or structures and will also help to discourage the use of portable generators indoors.		X			Safety for portable generators
	705	<i>Interconnected Electric Power Production Sources</i>					
FR9417	705	This revision creates a new Part IV to provide increased focus on the parts of the Code that address these higher voltage circuits.		X			New section
FR9594	705.1	Informational Note No. 2 and the diagrams are added to Section 705.1 to illustrate various terms used in Article 705 for a variety of power sources.		X			Revised
SR8359	705.1	Figures and titles have been modified to provide improved clarity and to align with terms used in Article 705.		X			Revised
FR9383	705.3	The recent changes to Section 90.4 in applying the NEC can cause some confusion as to which articles take precedent over others.		X			New section
SR8403	705.5	Though microgrids will most often include equipment suitable for the interconnection to other primary sources, such as interactive power production sources and control systems, the ability for a user of this Code to verify the “capability” of a microgrid to operate in interactive mode with another primary source is only practical where that microgrid is interconnected to that other primary source.		X			Revised
FR9374	705.6	The first sentence is deleted as this is already covered in Section 110.2. The section was reorganized for clarity. An informational note provides similar information as is found in Article 710 and points to the standard found in the annex that is used to evaluate interactive equipment.		X			Revised
SR8363	705.6	The list of equipment examples, which is not complete nor mandatory, has been moved to a new informational		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		note to simplify and clarify the mandatory requirement text.					
SR8408	705.8	The capacity requirements for loads are found elsewhere in the Code and depend upon the type(s) of loads being served. This revised section text provides requirements on how to determine the power source capacity based on the aggregate sources present. The informational note is deleted since it does not add clarity and is not necessary to apply these requirements.		X			Revised
FR9380	705.11	The title of Section 705.11 is changed to clarify that it refers to any connection to a service.		X			Revised
FR9389	705.12	This revision edits the opening paragraph for clarity. Unnecessary language was deleted from the second sentence for simplicity. A third sentence is added to clarify the currents referred to in this section which were formerly in Section 705.12(B)...		X			Editorial
FR9391	705.13	Power control systems do not only control power sources, some also interface with energy management systems for load management.		X			Revised
SR8366	705.13	This revision to 705.13 replaces requirements that have now been made redundant through the revisions made to 750.30. Systems covered under 705.13 can perform multiple functions for control of sources and loads. EMS is a more accurate term for those functions. The informational note clarifies that listed PCS are a subset of EMS with specific functionality directed to interconnected power sources.		X			Revised
FR9394	705.16	Section 705.16 is deleted as this section contains unenforceable language, “consider” and refers to the interrupting rating requirements and SCCR requirements that are handled as part of Sections 110.9 and 110.10. All equipment must be able to either interrupt or withstand maximum available fault current as required by the NEC. This section is not necessary since it does not modify Article 110.		X			Deleted section
FR9395	705.20	As a general requirement, it is stated here that a means must be provided to disconnect power source output circuit conductors from the conductors of other systems.		X			Revised
FR9397	705.25	This revision adds a sentence before the first level subdivision to ensure it is clear that the requirements within this section apply to the power source output conductors only, and are not intended to apply to other circuits within the power source systems. The sentence addressing integral enclosures was deleted as these requirements are addressed in the respective articles.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9399	705.28	The phrase, “power source output” is added to clarify the circuits being described by this section.		X			Revised
SR8388	705.28	This section has been revised to improve clarity.		X			Revised
FR9402	705.30	Sections 705.12(C), (D), and (E) are deleted and inserted as 705.30(C), (D), and (E).		X			Deleted section
SR8397	705.30(F)	The title of this section is changed to remove “power”, since there is no other location in this article where other transformers are covered.		X			Revised
SR8398	705.32	While Article 705 applies to both ac interconnected power production sources and dc interconnected power production sources, the issue addressed in Section 705.32 has always been applied only to ac interconnections of power production sources.		X			Revised
FR9407	705.40	This revision clarifies that it is the loss of the primary source, as the title suggests, that is the key concern of this section. By changing interconnected source to primary source in the proper locations, the intent is clarified. In the last sentence “electric utility and other” was added to emphasize was added that the electric utility is often the electric power production and distribution network to which this is connected.		X			Revised
FR9410	705.46	This revision adds specific requirements for the use of energy management systems to control loads connected to systems with on-site generation. It accommodates property owners who seek to further pursue electrification using on-site sources without requiring extensive electrical system equipment upgrades that are not necessary in all use cases.	X			varies	Can reduce loads without increasing the service size by using an EMS
FR9411	705.50	This revision rewords the opening paragraph of microgrid systems to better reflect how these systems are operated.		X			Revised
FR9412	705.75	This revision duplicates the requirements found in Section 712.55 to Article 705. The language was modified recognizing that there is an additional expanded requirement beyond that which is a part of Section 250.167 requiring ground-fault current detection on grounded systems greater than 60V whereas Section 250.167 only recognizes a permission for this detection and not a requirement for this detection. Furthermore, the specific circuit conductors are now referenced to ensure this requirement is applied to the correct portions of the microgrid, which also contain circuits within any connected sources (i.e. battery circuits within an ESS that would be covered in Article 480 or 706)		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9507	705.76	While there are existing requirements and certified products that perform multiple mode operation, new requirements for a similar multiple mode power system using multiple power production sources are being written now.		X			New section
FR9414	705.80	This revision creates a new Part III for systems operating in island mode. The power source capacity requirements are divided into three categories: automatic, manual, and no load management. Each of these categories have unique requirements for capacity of power sources. Power sources operating in island mode systems must operate within proper voltage and frequency for loads or cease to operate (Section 705.81). Section 705.82 is copied from 710.15(C) which deals with 120-volt supplies.		X			New section
SR8409	705.81	First draft language has been edited to add clarity to the requirements in this section.		X			Revised
	706	<i>Energy Storage Systems</i>					
FR9074	706.1	Informational Note No. 2 was revised to allow users to distinguish between Articles 480 and 706. This revision is consistent with the scope changes to Article 480. NFPA 1 was added with other standards referenced in Informational Note No. 3. NFPA 855 was added with other standards referenced in Informational Note No. 3. A hyphen was added between “ampere” and “hours” in Informational Note No. 1 for compliance with the NEC Style Manual.		X			Revised
FR9078	706.6	Some ESS will not be in or on a building or structure. The revised text better allows for such applications as outdoor systems, or microgrids.		X			Revised
FR9079	706.7	This revision adds commissioning requirements for ESS in a new (A).		X			Revised
SR8086	706.7	Delete requirements for commissioning and maintenance in one- and two- family dwellings. This aligns with NFPA 855 for maintenance and with a proposed revision to NFPA 855 for commissioning.		X			Revised
FR9081	706.8	Section 706.8 is deleted. The changes to Informational Note No. 2 in the scope of this Article make this section redundant and no longer necessary.		X			Deleted section
FR9086	706.15	System level disconnect and emergency shutdown function requirements are revised to be consistent with other similar articles.		X			Revised
FR9089	706.20(A)	A reference to NFPA 855 is being added to replace existing Informational Note No.		X			Revised
SR8091	706.31	ESS systems with listed power electronic interfaces have low and/or very brief shortcircuit current relative to the		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		utility, conventional generators, and direct battery interfaces.						
FR9133	706.40	Flow batteries are not fuel cell systems and should not reference Article 692 for requirements. The Informational Note refers users to NFPA 855 for the installation of ESS specific to flow batteries.		X				Revised
FR9134	706.50	The reference to Article 705 was incorrect as there is no Part III of that article. However, the requirements outlined in the previous parts of Article 706 would apply to these other systems.		X				Revised
FR9196	706.51	Requirements are added to address flywheel ESS that are also included under Article 706 in "Other Energy Storage Technologies." It is important for these systems to have bearing monitoring and containment in the event there are projectiles that break off of the system.		X				New section
	<i>708</i>	<i>Critical Operations Power Systems (COPS)</i>						
FR8909	708.1	An additional reference is made to ANSI/TIA-5017-2016 Telecommunications Physical Network Security Standard. This document includes requirements and guidelines for the physical network security including risk assessment, several levels of security to match the risk assessment to prevent vandalism, theft, etc. Informational note 3 is modified to promote harmonization with NFPA 110. Revisions are made to comply with sections 3.1.3.1 and 4.1.3 of the NEC Style Manual.		X				Revised
SR8034	708.2	Added section 708.2 on Reconditioned Equipment to correlate with articles 700, 701, 702 and per recommendation of correlating committee.		X				New section
FR8914	708.7	Cybersecurity is an aspect of safety and reliability in addition to the other factors affecting COPS and must be addressed in this code.		X				New section
SR8036	708.7	While Panel 13 agrees that cybersecurity is an important aspect of overall system reliability, the requirements are better suited in Article 110 to encompass this code as outlined in 90.3.		X				Revised
FR8917	708.8(A)	An informational note is added to send the code user to new section 708.7 which is created to supplement the commissioning plan. Revisions are made to comply with sections 3.1.3.1 and 4.1.3 of the NEC Style Manual.		X				Revised
FR9615	708.10(C)(2)	The informational notes are revised to reflect the proper title of the standards and compliance with the NEC style manual. The reference to ANSI is deleted and the permitted methods to protect the cables are provided in an informational form. Revisions are made to comply		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		with sections 3.1.3.1 and 4.1.3 of the NEC Style Manual and to correlate with 700.1.						
FR8931	708.14	Type CMR-CI cables are rated for "free air" installation and this section requires Type CMR cables to be installed in a raceway per 708.10, therefore it is deleted to minimize confusion. Additionally, the text is revised to reflect the proper language such that a 2-hour listed fireresistive cable system or a 2-hour electrical circuit protected system meets the requirement. The text is updated to remain consistent with other uses throughout the NEC®, for correlation.		X				Revised
FR8937	708.20(F)(1)	Normal service implies that the normal or primary power source can only be a utility per the NEC definition of "service." This section was revised to say "power source" to allow other types of sources for the normal power. This revision also harmonizes with NFPA 110.		X				Revised
FR8939	708.24(A)	A listing requirement is added to 708.24 to provide correlation throughout the code that all types of transfer equipment shall be listed.		X				Revised
SR8040	708.24(A)	Added the language to reference Part I and II of Article 705. Reconditioning statement was deleted in 708.24 and moved to 708.2 (see separate SR) per correlating committee recommendation.		X				Revised
SR8041	708.24	Section 708.24 for transfer equipment has been modified by changing the titles so that the subsections mirror the subsections for transfer equipment in section 700.5. This will improve consistency with the code. In addition, the subsection (D) content was modified to describe the functionality that's needed when emergency loads are supplied by a single feeder rather describing how to do it. This will improve clarity and useability of the code.		X				Revised
FR8944	708.54	The parent text is modified for clarity with respect to overcurrent protective devices (OCPDs) and the words "load-side" are added in (A), (B), and (C) to clarify that selective coordination must be analyzed both upstream and downstream. This revision clarifies existing requirements where critical operations power system OCPDs are replaced, modified, added or deleted. This is done to ensure that selective coordination with all supply-side and load-side OCPD's is maintained.		X				Revised
	710	<i>Stand-Alone Systems</i>						
FR9420	710.1	The scope of Article 710 is recommended to the Correlating Committee to be restricted to only those systems that only operate in island mode and cannot be		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		interconnected to the electric utility or other power production and distribution network.					
FR9422	710.10	The language is simplified with a reference to 705.10 for buildings with multiple power sources. Also, the reference to service equipment is removed since some stand-alone systems will have no service equipment since they are often installed where there is no utility service. The term “label” is added to the list of options for signage as some may believe that placards are too restrictive of good sign options.		X			Revised
FR9424	710.15(F)	The section is deleted as it does not modify the requirements of Section 408.36(D).		X			Deleted section
SR8423	710.15(F)	First draft language has been edited to add clarity to the requirements in this section.		X			Revised
	<i>712</i>	<i>Direct Current Microgrids</i>					
SR8074	712	This article is deleted in keeping with the request of a task group appointed by the Correlating Committee to “consider removing the definition of “DC Microgrid” and Article 712 based on the review of requirements in Article 705.” It is the determination of this task group that the deletion of this article and related term will not adversely impact users of this Code and will in fact, improve the usability of this document by removing terms and requirements that conflict with other terms and requirements that are globally applied throughout this Code, other common regulatory documents, and other standards.		X			Deleted article
FR9114	712.8	This revision creates a new section that requires commissioning.			X	varies	Commissioning
FR9115	712.25	Revisions are made to clarify that the requirements apply to any circuit conductors that are not solidly grounded such as “referenced grounded” or “functionally grounded”.		X			Revised
FR9116	712.35	The term “functionally grounded” is added to clarify the required disconnecting means operation for this system type.		X			Revised
	<i>720</i>	<i>Circuits and Equipment Operating at Less Than 50 Volts</i>					0
FR9580	720	This article adds confusion to the Code and should be deleted. Article 720 first appeared in the 1920 edition of the NEC. It was written for stand-alone electrical power systems for farms. This equipment has not been manufactured since the beginning of World War II.		X			Deleted article
	<i>722</i>	<i>Cables for Power-Limited Circuits and Fault-Managed Power Circuits</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9582	722	This new Article combines common cabling requirements found in Articles 725, 760, and 770 of the 2020 NEC and also relocates other cabling requirements from those articles into a single article.		X			New article
SR8380	722	The Article title has been revised to accommodate the addition of Class 4 cables which are not strictly power limited and optical fiber cables which are also not considered power limited cables.		X			Revised
SR8439	722	Per the direction of the CC, technology specific installation requirements have been put back into Articles 725, 760, and 770.		X			Revised
SRC160	722	Terminology for “Class 4” and “Fault-Managed” are updated for consistency and correlation.		X			Revised
SR8392	722.3(M)	“Class 2 and Class 3, and PLTC” were deleted since this requirement applies to all cables in Article 722. Fault-managed power cables” was added since Class 4 circuits are fault-limited but not power limited.		X			Revised
SR8395	722.12	Maintaining the requirement in Article 722.12(A) makes it clear that Class 4 cables are not exempt from Haz Loc requirements. The reference to the full articles has been changed to specific references in compliance with the NEC Style Manual. Section 722.12(B) was included to limit the use of Class 4 cables to Class 4 circuits unless the cable is listed for multiple purposes.		X			Revised
SRC128	722.12	The permitted use in Hazardous Classified Locations is moved to 722.10, and is modified to use similar language from 337.10 regarding applications in hazardous locations. Committee Comment No. 8395-NFPA 70-2021 [Section No. 722.12]		X			Revised
SRC129	722.12	The permitted use in Hazardous Classified Locations is moved to 722.10, and is modified to use similar language from 337.10 regarding applications in hazardous locations. “CL4” is replaced with “Class 4” where not associated with the designation of the cable.		X			New section
SR8448	722.179(A)	Since Article 722 includes Class 4 cables additional subsections are needed to be added to 722.179(A) and references changed to include those subsections. Informational note 4 was added to include the appropriate standard for Class 4 cables.		X			Revised
SR8458	722.179(A)(14)	Sections 722.179(A)(14) and 722.179(A)(15) have been added to 722.179 to address cable constructions.		X			New section
SR8459	722.179(A)(16)	Section 722.179(A)(16) has been added to Article 722 to address Class 4 cable construction. The panel notes that the correct reference is UL 1400-1 as stated, not UL 1400-		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		2 since the requirement is related to Class 4 systems, not just the cable.						
SR8495	722.179(B)	Section 722.179(B)(6) was added to address Class 4 cable markings. Table 722.179(B) was revised to add Class 4 cable types.		X				Revised
SR8613	722.179(A)(7)	PC 704 was originally directed at 760.179(G). This section was removed from 760 and moved into 722.179(A)(7). The revisions were made to 722.179(A)(7). The informational notes were revised to comply with section 3.1.3 of the NEC Style Manual.		X				Revised
	724	<i>Class 1 Power-Limited Circuits and Class 1 Power-Limited Remote-Control and Signaling Circuits</i>						
FR9591	724	The Class 1 definition was changed and applies only to the power limited circuits.		X				New article
SR8462	724	The title of Article 724 is changed to make it clear that Class 1 circuits are powerlimited and that Class 1 remote-control and signaling circuits are included. The Panel recognizes that titles of Articles are the purview of the Correlating Committee.		X				Revised
SR8464	724.1	A new section 300.26 was added providing classifications including class 2 and class 3 circuits and non-power limited remote- control and signaling circuits. An informational note is also added to 725.1 to direct the user of the Code to a new section 300.26 on Remote-control and Signaling Circuits Classification. This improves usability of the Code.		X				Revised
SR8618	724.3	The last sentence in the parent section was deleted since Class 1 circuits must comply with 300.2 through 300.26, as stated in 724.46. Class 1 circuits per 725.46 always required compliance with Article 300 Part I. The list of specific sections was left for continuity with 725.3 of the 2020 edition.		X				Revised
	725	<i>Class 2 and Class 3 Power-Limited Circuits</i>						
FR9602	725	This proposed new Article combines common cabling requirements currently found in Articles 725, 760, and 770 and also relocates other cabling requirements from those articles into a single article.		X				Revised
SRC133	725	Restructuring of Article 725 changed the location of requirements in Article 725. This revision restores the correct references across the document.		X				Revised
FR9562	725.1	Section 725.31 which covers Class 1 remote control and signaling circuits was deleted. Remote control and signaling circuits covered by 725 are now a subset of Class 2 and Class 3 circuits. The title of Section 725. has been		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		modified to reflect this change. Additionally, language was modified for clarity.						
SR8499	725.1	An Informational Note No. 2 was added to direct the user of the Code to a new section 300.26 on Remote-control and Signaling Circuits Classification. This improves usability of the Code. This action addresses the concerns of the Correlating Committee as stated in PC 666 to clarify the use and application of the terms remote-control, branch circuit and signaling circuit, branch circuit as it applies to the new Article 724.		X				Revised
FR9621	725.3(E)	CMP3 has modified the text to comply with the NEC Style Manual. 725.3(E) has been moved to the new Class 1 Article 724 as 724.3(E) and is revised in the new article to add clarity and comply with the requirement in the NEC Style Manual to use complete sentences. If the new Article is rejected the change will be made to 725.3(E).		X				New section
SR8500	725.12	This action changes the requirement into a permissive statement to add clarity and make the Code more user friendly. It also brings this section into compliance with the NEC style manual to not reference full Articles. In addition, it aligns the text of 725 with Article 760 relating to hazardous locations. Hazardous locations in Articles 516 and 517 are appropriately covered in those Articles and are not required in the Informational Note.		X				Revised
SRC099	725.12	The permitted use in Hazardous Classified Locations is moved to 725.10, and is modified to use similar language from 337.10 regarding applications in hazardous locations. SR-8500-NFPA 70-2021		X				Revised
SR8497	725.13	The revision to section 725.130 adds and corrects references to align with the reinstatement of installation criteria for Class 2 and Class 3 systems into Article 725 from Article 722.		X				Revised
FR9427	725.24	The language is revised to address support requirements for Circuit Integrity cable to remain consistent with other uses throughout the NEC®, for correlation.		X				Revised
FR9435	725.24	CMP3 has modified the text to add listing requirements for cable ties.		X				Revised
FR9438	725.24	CMP3 has modified the text remove “D” from “300.4(D)” and added 300.11 as appropriate. The change is already incorporated in FR TG2-18 establishing the new Article for Cables for Power-Limited Circuits. If the new Article is rejected the change will be made to 725.24.		X				Revised
SR8717	725.24	This second revision removes cables from this section since cables are now in Article 722 and mechanical		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		execution of work for cables is in 722.24. The text is revised to reflect that it covers equipment, not cables. Section 725.24(B) was deleted as it is covered in Article 722.					
FR9440	725.31	It is not appropriate to reclassify Class 2 or Class 3 circuits as Class 1 circuits just to require the use of Class 1 circuit wiring methods.		X			Revised
FR9444	725.35	725.35 is deleted. Class 1 circuits have been deleted from Article 725 and moved to a new Article. Remote control and signaling circuits covered by 725 are a subset of Class 2 and Class 3 circuits. This is covered by additional text and is added to the Scope 725.1 in first revision on Section 725.1 to make this clear and provide a reference for users of the Code.		X			Deleted section
FR9446	725.121(C)	The text was added by the TIA and already appears in the NEC. The panel agrees to keep it as-is. There is concern about how PoE systems will be inspected to comply with the NEC. A consistent label format will greatly ease the inspector burden, making it easy to confirm an install complies with Section 840.160 or Section 725.144 with a glance. This was overlooked by the CMP.		X			Revised
FR9447	725.127	Power limited sources are no longer always supplied by a single transformer or power supply. Technologies such as PoE lighting require equipment with multiple Class 2 outputs that are supplied from a common equipment power source that can exceed the 20-ampere limit. For example, even a system with just forty-eight, 60-watt outputs would require almost 3KW. The 20-ampere is retained in the exception for the short lengths of lighter gauge wiring.		X			Revised
FR9449	725.130(A)	It is not appropriate to reclassify Class 2 or Class 3 circuits as Class 1 circuits and to no longer consider them Class 2 or Class 3 circuits just to utilize Class 1 separation requirements.		X			Revised
FR9450	725.130(B)	Using “in accordance with” without “the requirements” adds clarity and maintains consistency with 725.130(A). The change is being made in the new Article 722, Cables for Power Limited Circuits, in Section 722.140(B) since Section 725.130 is deleted in Article 725 and moved to the new Article. If the new Article is rejected the change will be made to Section 725.130(B).		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9451	725.133	It is not clear if the change would affect the requirements. There is no technical substantiation given for the change. The panel notes that this section was only used to indicate that the referenced requirements only applied to Class 2 and Class 3 circuits and not to Class 1 circuits. Since Class 1 circuits are no longer part of 725 or the new Article for Cables for Power Limited Circuits, 722, this section is no longer relevant and is removed from 725 and NOT moved to the new Article 722.		X			Revised
SR8498	725.136	The installation requirements of 725.136 and 725.139 have been added back into Article 725 and removed from Article 722. The requirements have been editorially revised removing the unnecessary use of “permitted to be” and changed to “shall not be” as directed by the CC.		X			New section
FR9458	725.144	The revised title more accurately reflects the content of the section. The section relates to the heating effects associated with the bundling of 4-pair cables and has nothing to do with data. The proposed change also improves correlation, by aligning Section 725.144 with Section 840.160 as it was revised in the 2020 code, which recognizes that the table and its data considered 4-pair cable only, and are only applicable to 4-pair cables.		X			Revised
FR9543	725.144(B)	A reference to the required temperature rating marking of LP cables should be included to be complete and consistent with typical LP cable markings. This reference will clarify that the bundle size and ampacity values are dependent on cable temperature rating. See 722.179(B)(4) for cable temperature marking requirements. First revision TG2-48 adds the same text to the informational note in 725.179.		X			Revised
SR8479	725.144	Only Section 725.144(A) is limited to 4-pair cables, not the entire Section.		X			Revised
FR9547	725.179	The informational note is being added to provide readability of the code.		X			Revised
	<i>726</i>	<i>Class 4 Fault-Managed Power Systems</i>					
FR9606	726	New Article 726 for Class 4 Power Systems. The proposed new article also includes a new cable type specifically for Class 4 systems.		X			New Class 4 power system
SR8261	726	The application of class 4 systems in a dwelling unit environment has not been adequately studied at this time.		X			Revised
SRC131	726	Terminology for “Class 4” and “Fault-Managed” are updated for consistency and correlation. “CL4” is replaced with “Class 4” where not associated with the designation of the cable.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR8290	726.1	This action adds clarity to the requirement that the installation of systems and utilization equipment is included.		X			Revised
SRC130	726.1	Terminology for “Class 4” and “Fault-Managed” are updated for consistency and correlation. “CL4” is replaced with “Class 4” where not associated with the designation of the cable.		X			Revised
SR8357	726.3	Article 722 contains all of the general requirements for the installation of cables. Providing a reference to Article 722 is needed for usability of the Code.		X			New section
SRC095	726.12	A new section is created to establish a “Uses Not Permitted” to relocate the Class 4 Power System restriction from the scope.		X			New section
SR8317	726.17	This second revision adds the correct number (UL 1400-1) and title for the referenced standard in Informational Note 1. (PC 1904, PC 1259, PC 1773) The text was revised to make it clear that dependent devices need to be identified as part of the listing information but that each combination of dependent devices does not require a separate identification and listing. An informational note 2 providing an example is added for clarity. (PC 1912) Response		X			Revised
SRC136	726.110	Section 770.110 is deleted except for 770.110(C) to eliminate duplication and correlate with new 722.135. The first sentence in 770.110 is revised and 770.111 is created which now contains the language formerly in 770.110(C).		X			Deleted section
SR8327	726.121(A)	Section 726.121(A) has been deleted and combined with current 726.121(B). The list of faults was removed as this is appropriately handled by the listing standard to include series faults.		X			Revised
SR8341	726.121(B)	(B) was changed to (A) to accommodate the deletion of section (A) The list has been updated to reflect the behaviors outlined in the listing standard that are critical for safety.		X			Revised
SR8348	726.121	This second revision makes the following changes.		X			Revised
SR8720	726.124	This second revision separates and clarifies the marking requirements for the input Class 4 terminals of the receiver and the output terminals or socket outlets of the receiver that provide power to other equipment.		X			Revised
SR8470	726.144	Class 4 systems are power systems and Class 4 cables are intended to carry current.		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SRC103	726.144	The reference to Class 4 cable requirements is moved to Informational Note No. 1 to a more appropriate location to reflect the guidance it serves. The existing Informational Note is designated at Informational Note No. 2 and revised with the appropriate standards reference.		X			Revised
SR8356	726.203	The requirements have been removed from 726.203 as these cable installation requirements are now addressed by Article 722.		X			Revised
SRC101	726.212	The permitted use in Hazardous Classified Locations is moved to 726.10, and is modified to use similar language from 337.10 regarding applications in hazardous locations. SR-8297-NFPA 70-2021		X			Revised
SR8368	726.224	This second revision removes cables from this section since cables are now in Article 722 and mechanical execution of work for cables is in 722.24 The text is revised to reflect that it covers equipment, not cables, and to align with the 725.24 text. This section is renumbered and relocated to Part I as 726.24 to align it with Article 725 numbering. The note is deleted since it only applies to cables.		X			Revised
SR8294	726.225	The information in 726.225 is a duplication of what is covered in Article 722.		X			Revised
SR8273	726.335	The information in 726.335 is a duplication of what is covered in Article 722, Table 722.135(B). Article 726 as modified in the scope no longer applies to dwelling units and therefore the deletion of 726.335(K) and (L) dealing with dwelling units as part of the entire deletion of 726.335 removes any conflict with the scope.		X			Revised
SR8301	726.336	The information in 726.336(H) is a duplication of what is covered in Article 722. The moving of 726.336 to 726.136 is done to be consistent with the numbering of other Articles. Re-alphabetize subsequent sections.		X			Revised
SRC102	726.336	“CL4” is replaced with “Class 4” where not associated with the designation of the cable. SR-8301-NFPA 70-2021		X			Revised
SR8303	726.341	The information in 726.341 is a duplication of what is covered in Article 722.		X			Revised
SR8304	726.343	The information in 726.343 is a duplication of what is covered in Article 722.		X			Revised
SR8305	726.379	Except for 726.379(D), the information in 726.379 is a duplication of what is covered in Article 722. Section 726.379(D) has been deleted and not included in 722 because there will not be a CL4 tray cable.		X			Revised
	728	<i>Fire-Resistive Cable Systems</i>					

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR9481	728.5(B)	The section is revised as a fire-resistive cable is installed in a raceway, not a fire-resistive system.		X			Revised
FR9482	725.5	The section is revised as a fire-resistive cable is installed in a raceway, not a fire-resistive system. The “fire rated system” is changed to fire-resistive system for consistency in this article.		X			Revised
FR9486	728.60	Fire-resistive system is revised to properly reflect fire-resistive cable system, as defined and the subject of this entire article, for consistency/correlation.		X			Revised
	<i>750</i>	<i>Energy Management Systems</i>		X			
FR9120	750.50	The title of the section was revised for clarity. The informational note has been deleted as the term “remote” is widely understood.		X			Revised
	<i>760</i>	<i>Fire Alarm Systems</i>					
SR8692	760.12	Section 760.12 was developed by taking 760.3(C) and creating a new section to address hazardous locations aligning it with other Articles of the NEC. Hazardous locations in Articles 516 and 517 are appropriately covered in those Articles and are not required.		X			New section
SRC104	760.12	The permitted use in Hazardous Classified Locations is moved to 760.10, and is modified to use similar language from 337.10 regarding applications in hazardous locations. SR-8692-NFPA 70-2021		X			Revised
FR9523	760.24	Listing is appropriate as the associated standards define critical performance ranges that can impact their suitability for use, including minimum and maximum operating temperature, resistance to ultraviolet light for outdoor installations, etc.. In addition, the panel added a reference to 300.11 as applicable to these installations and to correlate with the new Articles 724 for Class 1 Circuits and 722 for Cables for Power-limited Circuits.		X			Revised
FR9524	760.33	Fire alarm control panels contain electronics that can be damaged by surges appearing on the supply side of the equipment. Providing overvoltage protection can increase the reliability of an installation. The panel added the new section after 760.32 as new 760.33. 760.32 covers NPLFA and PLFA circuits that leave the building, including overvoltage protection for these circuits. Having these requirements in sequence adds to the usability of the Code.			X	\$ 100	Resiliance
FR9552	760.130(A)	It is not appropriate to reclassify PLFA circuits as NPLFA circuits and to no longer consider them PLFA circuits just to utilize NPLFA separation requirements.		X			Revised
SR8718	760.130(A)	Section 760.130(A) adds listing requirements since Class 4 systems limit the current available into a fault but not		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		the transmitted voltage and current, these devices need to be evaluated, rated and listed for their intended use.						
FR9532	760.135(C)	An informational note is added for clarity and usability of the NEC. The specific section of NFPA 90A is included in accordance with the NEC Style Manual. Also, adding this informational note provides consistency with Section 760.135(B) Response		X				New item
FR9534	760.136(G)	It is not appropriate to reclassify PLFA circuits as NPLFA circuits and to no longer consider them PLFA circuits just to utilize NPLFA separation requirements.		X				New section
FR9535	760.139	The title of (A), "Two or More PLFA Circuits", does not match the text which includes mixing PLFA circuits with Class 3 and Comm circuits in addition to two or more PLFA circuits. This First Revision moves Class 3 and Communications circuits under their own correct heading for clarity. The First Revision is being made in the Article 722 for Cables for Power-limited Circuits. If the new article is not accepted the change will be made to 760.139.		X				Revised
FR9536	760.176	NPLFA cables are permitted to contain optical fibers and are marked with the suffix "-OF." This is permitted in the UL standard for non-power limited fire alarm cables, UL 1425. In addition, 770.3(C) requires composite optical fiber cables to be classified as electrical cables based on type of electrical conductors. 760.176 is revised to permit optical fibers. A note is added to Table 760.176(G) to include the "-OF" suffix for cables containing optical fiber members.		X				Revised
FR9538	760.176	An informational note is added to Section 760.176 to reference UL 1425, Standard for Cables for Non-Power-Limited Fire-Alarm Circuits. This adds clarity and increases the usability of the NEC.		X				Revised
FR9540	760.179(I)	This first revision is Included in the new cable article 7ZZ as 7ZZ.179(A)(13) and a note to Table 7ZZ.179(B)(1) Cable Type Markings. See See public input 3671 and TG2-18. No change is needed to 760.179 if PLFA cable is moved to new article. Continuous Line-Type Fire Detectors do not use an "-OF" suffix. If the proposed new cable article is rejected the panel will issue a first revision to make this change in Section 760.179.		X				New section
FR9541	760.179	This first revision is included in the new cable article 722 as an informational note to 722.179(A). See public input 3671 and TG2-18. If the proposed new cable article is rejected the panel will issue a first revision to make this correction in 760.179. The informational note referring to		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		the listing standard was added to improve understanding and usability of the code.					
FR9542	760.179(I)	NPLFA cables are permitted to contain optical fibers and are marked with the suffix “-OF.” This is permitted in the UL standard for non-power limited fire alarm cables, UL 1425. In addition, 770.3(C) requires composite optical fiber cables to be classified as electrical cables based on type of electrical conductors. 760.176 is revised to permit optical fibers. A note is added to Table 760.176(G) to include the “-OF” suffix for cables containing optical fiber members.		X			Revised
	<i>770</i>	<i>Optical Fiber Cables</i>					
FR8812	770.3	“Composite” was changed to “hybrid” in order to coordinate with the change in the definition of composite optical fiber cables. Vertical support requirements for circuit integrity cables were added to correct an omission. An editorial change was made to comply with the NEC Style Manual.		X			Revised
FR8814	770.24	The requirements for the listing of plenum cable ties are in 800.170. The edition of NFPA 90A has been updated. Requirements for the support of circuit integrity cable were added to adequately cover the installation of these cables. Informational Note No. 1 was revised editorially to comply with the NEC Style Manual section 3.1.3.1. CMP-16 adds a requirement for cable ties for correlation with 800.24.		X			Revised
SR7891	770.24(A)	The revision adds semicolons to add clarity to the lists.		X			Revised
FR8815	770.27	The requirement that the temperature of a cable shall not exceed its temperature rating is a general requirement for communications cables; see 800.27. Logically, this requirement should also apply to optical fiber cables.		X			New section
FR8885	770.100(B)(2)	Non-conductive plastic (PVC) water pipe, both in initial installations and in repair situations, has become more widespread. Therefore, water pipe may not provide a continuous, reliable connection to ground (earth). Hence, the use of the water pipe as a grounding means should be de-emphasized by moving it to the end of the list (making it Item 7 and moving Item 3 through 7 up one) and adding a qualification to ensure continuity exists.		X			Revised
FR9067	770.113	This FR adds "Uses Permitted" to the title of the sections showing all the existing permitted uses. This FR also adds "Uses Not Permitted" wherever appropriate. Organizing text into "Uses Permitted" and "Uses Not Permitted" sections is editorially consistent with usage throughout the Code.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8982	770.114	The reference to 770.100(B)(2) has been expanded to 770.100(B) for completeness. Referring to 770.100(A) for the grounding conductor adds clarity and specificity.		X			Revised
SRC135	770.154	Section 770.154 is deleted to eliminate duplication and correlate with new 722.135(B). SR-7915-NFPA 70-2021		X			Deleted section
FR8985	770.179	The revision adds an Informational Note to reference the Safety Standard for Optical Fiber Cable.		X			Revised
FR8989	770.179(C)	The revision editorially revises the Title of the Standard referenced and the issue date and adds a reference to UL Standard 1685. The Informational Note was revised editorially to comply with the NEC Style Manual, Section 3.1.3.1.		X			Revised
FR8990	770.179(E)	language used Articles 725, 728, 760, and 800 all regarding the installation of Circuit Integrity Systems, Fire-Resistive Cable Systems, and Electrical Circuit Protective Systems.		X			Revised
SRC111	770.179(C)	Section 770.179 (Part VI) is deleted except for the first sentence as a reference to 722.179 to eliminate duplication and correlate with new 722.179. SR-7973-NFPA 70-2021		X			Deleted section
Chapter 8: Communications Systems							
FR8960	global	The revision moves Part V title to the beginning of the Listing Requirements Section.		X			Revised
	800	<i>General Requirements for Communications Systems</i>					
SRC086	800.2	The Correlating Committee relocates 800.3(G) to 800.2 for consistency with other articles of the Code.		X			Revised
FR8800	800.3	Revising Section 800.3 at the beginning of Chapter 8 will help clarify for users which article is to be used for which communications system and circuit application, and when applications correctly belong under appropriate articles of Chapter 7.		X			Revised
FR8806	800.24	Changing “nonmetallic cable ties” to “plenum cable ties” is an editorial clarification.		X			Revised
SR7917	800.24(A)	The revision adds semicolons to provide clarity to the lists.		X			Revised
FR8842	800.44	This FR continues the consolidation of common requirements from Articles 805, 820, 830 and 840 into new general Article 800 begun during the 2020 NEC revision cycle.		X			Revised
FR8845	800.47	This FR creates new Section 800.47 and continues the consolidation of common requirements from Articles 805, 820 and 830 into new general Article 800 begun during the 2020 NEC revision cycle.		X			New section

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8847	800.48	This FR creates new Section 800.48 and continues the consolidation of common requirements from Articles 805 and 820 into new general Article 800 begun during the 2020 NEC revision cycle.		X			New section
FR8849	800.53	This editorial revision provides clarification and correlation with 800.44 and other related sections of Article 800. The term “lightning protection conductors” provides correlation with NFPA 780, and NEC Section 250.106. The reference to NFPA 780 is updated to the current 2020 edition and the Informational Notes were revised editorially to comply with the NEC Style Manual, Section 3.1.3.1.		X			Revised
FR8890	800.100(A)(3)	The requirement should include all the metal members of the communications cable. Some communications cables include metal strength members in addition to the metal sheath component and signal carrying conductors that may become energized during a power fault or lightning event. Also, the term “metallic” is changed to metal per the Style Manual.		X			Revised
FR8892	800.100(A)(4)	A lightning event is the predominant source of high voltage developed across a bonding or grounding electrode conductor. This voltage is a function of the conductor inductance, length, and the lightning current waveform (Ldi/dt). Voltages developed during other events, such as a power fault, are a function of the conductor resistance and are typically low. Hence the requirement is focused on lightning events. CMP-16 revises the text to change “where” to “if” per the Style Manual.		X			Revised
FR8897	800.100(B)(2)	Non-conductive plastic (PVC) water pipe, both in initial installations and in repair situations, has become more widespread. Therefore, water pipe may not provide a continuous, reliable connection to ground (earth). Hence, the use of the water pipe as a grounding means should be de-emphasized by moving it to the end of the list (making it Item 7 and moving Items 3 through 7 up one) and adding a qualification to ensure continuity exists.		X			Revised
FR8899	800.100(B)(1)	The title is editorially revised to clarify the contents of the figure and differentiate between Figures 800.100(B)(1) and (B)(2). In Figure 800.100(B)(1) the box that contains the text “Communications equipment, protector or shield” should state “Communications equipment, protector, or cable shield” as it is the cable shield that is to be bonded or grounded. Communications equipment, other than cables, is typically not shielded.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8901	800.100(B)(3)	The text must include a prohibition of the use of steam and hot water pipes not only as grounding electrodes, but as a conductive means to access grounding electrode. Use as a conductive means to access the grounding electrode could defeat the grounding electrode connection should the pipe be repaired or replaced with non-conductive material. Also, the term “metallic” is changed to “metal” per the Style Manual.		X			Revised
FR9023	800.100(B)(2)	The Informational Note is revised to correctly state that Figure 800.100(B)(2) illustrates the condition where there is no intersystem bonding termination or terminal block providing access to the building grounding means.		X			Revised
SRC163	800.110(A)	The action corrects the absence of a reference to (A)(3) in the lead-in statement. Second Revision No. 7924-NFPA 70-2021 [Section No. 800.110(A) [Excluding any Sub-Sections]]		X			Revised
FR9071	800.113	This FR adds "Uses Permitted" to the title of the sections showing all the existing permitted uses.		X			Revised
FR8964	800.133	This FR consolidates 805.133 and 820.133 into new 800.133. Companion FRs delete 805.133 and 820.133.		X			New section
FR9021	800.170	The revision adds listing requirements for plenum cable ties to Article 800 since cable ties are used in multiple articles. The name of these cable ties was changed from “Plenum Grade Cable Ties” to “Plenum Cable Ties” for consistency.		X			New section
SR8158	800.170	The requirements for use and listing of communications equipment are in 805.170 and 840.170(C). Since these requirements appear in more than one Article in Chapter 8, they should be moved to the general article, Article 800, along with the other listing requirements that were moved in the First Draft.		X			Revised
FR9036	800.179	The revisions correct the omission of requirements in the general Article 800.179.		X			Revised
SR7976	800.179	Since hybrid power and communications cable have applications in more than one article, the requirements are being deleted in Article 805 (PC209) and moved to Article 800 with the other communications cables types.		X			Revised
SR7977	800.179(C)(1)	The Informational Note for the US Flame test was incorrect for the type of cables. The first revision was intended to update the Informational Note to be in accordance with the new Style manual but resulted in an error. This revision corrects the error.		X			Revised
SR7978	800.179(C)(2)	The test method referenced is being corrected.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7988	800.179	Since hybrid power and communications cable have applications in more than one article, the requirements are being deleted in Article 805 (PC209) and moved to Article 800 with the other communications cables types.		X			Revised
FR9053	800.182(A)	This revision updates the date of ASTM E84, UL723, NFPA 262, and 90A. The Informational Notes were revised editorially to comply with the NEC Style Manual, Section 3.1.3.1.		X			Revised
	<i>805</i>	<i>Communications Circuits</i>					
SR7931	805.3	The scope of Article 800 covers the general requirements for Article 805 therefore 805.3 is redundant and is being deleted.		X			Revised
SR7979	805.17	This is a companion Public Comment to PC-205 which moves the listing requirements for communications equipment to Article 800. Accordingly it recommends deleting the requirements for listing of communications equipment from this section. With the deletion of the requirements for listing communications equipment, the section only deals with the listing of protectors, and the title is therefore changed.		X			Revised
SR7932	805.18	The reference 805.170 is changed to 800.171 since general requirements are now in Article 800.		X			Revised
FR8850	805.47	This FR continues the consolidation of common requirements from Articles 805, 820, 830 and 840 into new general Article 800 begun during the 2020 NEC revision cycle and is a companion FR to the FR which moved most of 805.47 to new 800.47. The requirements for underground block distribution are unique to Article 805 and are retained in Article 805.		X			Revised
FR8851	805.48	This FR continues the consolidation of common requirements from Articles 805, 820, 830 and 840 into new general Article 800 begun during the 2020 NEC revision cycle. This FR coordinates with the FR that establishes new 800.48.		X			Revised
FR8854	805.50(C)	Section 805.50(C) has been revised editorially to improve clarity and comply with sections 3.3.1.2 and 3.3.2 of the Style Manual. Metallic was changed to metal to comply with the NEC Style Manual.		X			Revised
FR9080	805.90(A)(1)	This change updates the reference to the issue date of the NESC and corrects section numbering. The latest published edition is 2017 and "Section 9" is corrected to "Section 09". The Informational Note was editorially revised to comply with the 2020 NEC Style Manual, Section 3.1.3.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8966	805.133	Sections 805.133 and 820.133 have been consolidated into new 800.133; see FR-8964. Consequently 805.133 is being deleted.		X			Revised
FR8968	805.154	Section 805.154 only deals with cables. Therefore, text dealing with wires, raceways and cable routing assemblies has been deleted.		X			Deleted section
FR8837	805.170(C)	The revision deletes the requirements for Cable Ties since the requirements were moved to the General Article 800.		X			Deleted section
FR9005	805.170	The revision adds a reference to the third Edition UL62368-1 which is the 2018 Edition and deletes the term “transport” from Informational Note 2. The Informational Notes were revised editorially to comply with the NEC Style Manual, Section 3.1.3.1.		X			Revised
FR9027	805.179	The revisions are as follows: Deletes the requirements in 805.179 that are being moved Article 800.179 (PI-210) and renumbers 805.179 into A and B deleting 805.		X			Revised
SR7980	805.179	This is a companion Public Comment to PC-208 added the from 805.179 to 800.179. This PC deletes 805.179 because it will be redundant if the text is moved to 800.179.		X			Revised
	<i>810</i>	<i>Antenna Systems.</i>					
FR8912	810.3	Reference to Hazardous location requirements of Chapter 5 are added here since Chapter 8 has no requirements located within. The second reference to Article 640 is removed since it is redundant. The reference to Article 820 is changed to Chapter 8 since other cabling besides coax is now being used to wire antenna systems. The long text description was changed to a list format to comply with the NEC Style Manual.		X			Revised
FR8918	810.4	Reference to Article 820 was changed to reference Chapter 8 since distribution system wiring now consist of more than just coax. CMP-16 clarified that this section refers to the installation of systems.		X			Revised
FR8919	810.5	The title is changed so that the title reflects all the components listed in the rule radio interference eliminators, interference capacitors, and noise suppressors.		X			Revised
FR8925	810.14	The reference to 100.14(A) and (B) replaces the use of vague and unenforceable requirements and adds to the usability of the Code.		X			Revised
FR8927	810.15	The term Bonding is added since the antenna mast is “bonded” when the bonding jumper terminates to an intersystem bonding termination device. The term “grounded” applies when there is no intersystem bonding		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
		system device present. The Informational Note is updated to reflect the latest edition of NFPA 780.					
FR8936	810.20(A)	The term bonded is added since the metal shield is “bonded” when terminated to an intersystem bonding termination device. CMP-16 changed the exception to comply with the NEC Style Manual, 3.1.4.1 & 4.1.4. Also, the term “metallic” is changed to “metal” per the Style Manual.		X			Revised
FR8941	810.20(C)	The reference to the terms “Bonding” and “bonded” are added since the antenna discharge unit is “bonded” when terminated to an intersystem bonding termination device.		X			Revised
FR8945	810.21(F)(2)	Non-conductive plastic (PVC) water pipe, both in initial installations and in repair situations, has become more widespread. Therefore, water pipe may not provide a continuous, reliable connection to ground (earth). Hence, the use of the water pipe as a grounding means should be de-emphasized by moving it to the end of the list (making it item 6 and moving existing items 3 through 6 up one).		X			Revised
FR8948	810.52	CMP-16 changed the title by adding the word “Conductors” to match the content of the rule which is about size of conductors and not about the size of the antenna CMP-16 changed “where” to “if” to conform with the Style Manual, 3.3.4 in the Table.		X			Revised
	820	<i>Community Antenna Television and Radio Distribution Systems</i>					
FR8841	820.3	Code usability is improved by explicitly stating that this section deals with installations. The recommended text complies with the NEC Style Manual, Section 3.3.5. See the parallel requirement in 770.3.		X			Revised
SR7933	820.3	The scope of Article 800 covers the general requirements for Article 820 therefore 820.3(A) is redundant and is being deleted.		X			Revised
FR8859	820.44	This is a companion FR which consolidates all the requirements of 820.44 into 800.44. Hence, the requirements of 820.44 are now redundant and unnecessary in Article 820.		X			Revised
FR8860	820.47	This is a companion FR which consolidates all the requirements of 820.47 into 800.47. Hence, the requirements of 820.47 are now redundant and unnecessary in Article 820.		X			Revised
FR8861	820.48	This FR continues the consolidation of common requirements from Articles 805, 820, 830 and 840 into new general Article 800 begun during the 2020 NEC		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY			NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	Neutral	Increase		
Sub Code:								
		revision cycle. This FR is a companion FR which establishes new 800.48.						
SR7981	820.93(D)	The exception is being revised to state that the determination of the acceptability is determined by 501.150 , 502.150 and 502.150. The CC requests that this exception be consistent with the general requirements in 800.3 (B) 800.3 (B) Circuits and equipment installed in a location that is classified in accordance with 500.5 and 505.5 shall comply with the applicable requirements of Chapter 5.		X				Revised
FR8971	820.133	Sections 805.133 and 820.133 have been consolidated into new 800.133; see FR-8964. Consequently 820.133 is being delete Response		X				Revised
FR8972	820.154	Figure 820.154 deals with coaxial cables only, thus the title of Figure 820.154 is changed to indicate that it only deals with coaxial cables.		X				Revised
FR9061	820.179	The optional marking requirements were moved into the general article (Article 800) PI-210 and need to be deleted from Article 820 to avoid redundancy. In addition, the voltage marking in 820.179 are covered in 800.179 and are considered redundant and are being deleted.		X				Revised
SR7982	820.179	This is a companion Public Comment to PC-208 which moves the marking requirements to 800.179. The revision deletes the marking requirements from this section, and since Part VI only consists of the marking requirements, entire Part VI is being deleted.		X				Revised
	830	<i>Network-Powered Broadband Communications Systems</i>						
FR8828	830.1	Composite was changed to hybrid to coordinate with the definition change in Article 100. CMP-16 understands that scope is under the purview of the Correlating Committee.		X				Revised
FR8831	830.3	Code usability is improved by explicitly stating that this section deals with installations. See 830.3(B) which uses the term "installations" multiple times. The recommended text complies with the NEC Style Manual, Section 3.3.5. See the parallel requirement in 770.3. Subsection 830.3(B) is deleted because this text has been moved to Subsection 800.3. Subsection 830.3(C) is deleted because it is redundant since the requirement is in 800.24.		X				Revised
SR7935	830.3	The scope of Article 800 covers the general requirements for Article 830 therefore 830.3 is redundant and is being deleted.		X				Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8833	830.24	Section 830.24 is deleted because it is redundant. The requirements in 830.24 are in 800.24.		X			Deleted section
FR9159	830.40(B)	The exception has been deleted since it refers to cables installed 20 years ago, and is no longer relevant for current installations.		X			Deleted section
FR8864	830.44(B)	The reference to the National Electrical Safety Code is updated to the latest edition, 2017 and the wording has been edited for clarity and compliance with the NEC Style Manual.		X			Revised
FR8866	830.47	This FR continues the consolidation of common requirements from Articles 805, 820, 830 and 840 into new general Article 800 begun during the 2020 NEC revision cycle and is a companion FR that consolidates 805.47, 820.47 and parts of 830.47 into new 800.47.		X			Revised
FR9026	830.47	Note 4 has been deleted since it refers to cables installed 20 years ago, and is no longer relevant for current installations.		X			Revised
FR8974	830.133	A splice in a medium-powered network-powered communications could pose a fire hazard if not protected. The exceptions were revised to put the text in positive language to comply with the NEC Style Manual.		X			Revised
SR7936	830.133(A)	In 830.133(A)(1)(b)(1) and (A)(1)(d)(1) the reference to Part III is changed to Part II since Part III has been renumbered to Part II. This revision is based on the guidance provided by the Correlating Committee in Public Comment 897.		X			Revised
FR8976	830.160	Bending radius is an important installation requirement to maintain reliable transmission performance of network broadband cables.		X			Revised
	<i>840</i>	<i>Premises-Powered Broadband Communications Systems</i>					
FR8816	840.1	There is no need to limit component signals to electrical only. It is possible that the signals could be optical. CMP-16 understands that scope is under the purview of the Correlating Committee.		X			Revised
FR8819	840.3	Code usability is improved by explicitly stating that this section deals with installations.		X			Revised
SR7945	840.3	The scope of Article 800 covers the general requirements for Article 840. The requirements 840.3 are covered in 800.3 and are redundant and being deleted.		X			Revised
SR7946	840.16	The listing requirements for communications cables were moved from Article 805 to Article 800, thus the reference to 805.179 for listed communications cables is incorrect.		X			Revised
SR7984	840.17	The second revision deletes redundant requirements from 840.170.		X			Revised

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8822	840.24	Section 840.24 is deleted because it is redundant. The requirements in 840.24 are in 800.24.		X			Deleted section
FR8824	840.25	Section 840.25 is deleted because it is redundant. The requirements in 840.25 are in 800.25.		X			Deleted section
FR8825	840.26	Section 840.26 is deleted because it is redundant. The requirements in 840.26 are in 800.26.		X			Deleted section
FR8870	840.47	This FR continues the consolidation of common requirements from Articles 805, 820, 830 and 840 into new general Article 800 begun during the 2020 NEC revision cycle.		X			Revised
FR8871	840.48	The references to sections of Article 770 become redundant with the acceptance of PI-59 (revised 840.3(C)) that refers to virtually the entire Article 770. References to 805.48 and 820.48 become redundant with the establishment of new 800.48 which moves the requirements of 805.48 and 820.48 into (new) 800.48. Section 840.3(A) requires compliance with Article 800.		X			Revised
FR9085	840.94	CMP-16 updates the date of NFPA 780.		X			Revised
FR8977	840.133	References to parts of Article 770 are redundant since the entire article is referenced in 840.3.		X			Revised
FR8980	840.160	This FR modifies the Informational Note to make it consistent with 840.160. This better describes how to manage heat rise in cable bundles based on 725.144.		X			Revised
FR9000	840.170(E)	The revisions correct an error and add a reference to the general Article.		X			Revised
Chapter 9: Tables							
FR7580	global	The revision clarifies that the requirement restricts the nipple to 24 inches without connectors.		X			Revised
FR7626	global	New row data was added to Table 4, Chapter 9 to address the new sizes 5 and 6 inch EMT.		X			Revised
FR8648	global	This action adds new Table 13 covering protection techniques for hazardous (classified) locations to Chapter 9. The new table to replaces existing tables in Article 505 and 506 with one comprehensive Table addressing all of the Protection Techniques or Types of Protection for Hazardous Locations. This action also incorporates the recommendations of PIs 2220, 2263, 722 and 728.		X			New Table
SR7698	Table 13	While it is recognized that requirements for type of protection “v” are contained in ANSI/UL 60079-13, the standard has not developed to the point that it resolves the concerns raised at the first draft stage of the process.		X			Revised
Informative Annex A: Product Safety Standards							

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
FR8323	global	This revision adds Article 311 type MV cable joints and terminations to Informative Annex A as these are relevant standards associated with Article 311.		X			Revised
FR8326	global	The Panel added the AAMI as a new relevant standard.		X			Revised
FR8333	global	The Panel added new Informative Annex K. The provision of medical care in the home is increasing along with the attendant use of medical electrical equipment (MEE). Informative Annex K covers the assessment and installation of MEE in dwellings and residential board-and-care occupancies, including assisted living residences. Such information will help ensure the electrical safety of those individuals who must utilize MEE.		X			Revised
FR9160	global	This revision will update UL 2196 in Informative Annex A under Article 728 to properly reflect the title of this standard. "Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables." Response		X			Revised
SR7541	A.1	The annex is revised to reference current safety standards. Part 2 has been added to address product safety standards for conductors and equipment that do not have an associated listing requirement Response		X			Revised
SRC096	A.1	The UL standards are updated in Annex A. UL 121303 and FM 121303 are added to Annex A for Articles 500 and 505. Committee Comment No. 7541-NFPA 70-2021 [Section No. A.1]		X			Revised
Informative Annex C: Conduit, Tubing, and Cable Tray Fill Tables for Conductors and Fixture Wires of the Same Size							
FR7642	global	New column data was added to Table C.1 of appendix C to address the new sizes 5 and 6 inch EMT.		X			Revised
FR7643	global	New column data was added to Table C.1(A) of appendix C to address the new sizes 5 and 6 inch EMT.		X			Revised
FR7644	global	The references for Multiconductor MC Cable fill references were corrected to the correct Section and table numbers.		X			Revised
SR8190	global	Table C.8 was revised to include trade size 5 and 6 for IMC. Table C.9 will need to be revised in a future edition of the NEC.		X			Revised
Informative Annex E: Types of Construction							
SR8483	global	Changes were required to address the addition of mass timber buildings to Type IV construction in the model building codes.		X			Revised
Informative Annex K: Use of Medical Electrical Equipment in Dwellings and Residential Board-and-Care Occupancies							

Table 8. 2023 NEC Changes Cost Impact

Code Change #	2023 NEC CHANGE SUMMARY		NEC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
SR7543	global	The phrase “protective earth” has been corrected reflect the requirements of 250.4. The reference to 210.16 in list item #2 is changed to 210.23(B)(2) for 50% branch circuit rating. The wording in list item #6 to “verify the overcurrent protective device(s) and other fault detection devices do not operate” is deleted as accomplishing this in practice would be impracticable.		X			Revised

APPENDIX I

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G32-21	304.1	Modified: Lithium-ion or lithium metal battery testing, research and development is considered a Group B occupancy.	X			Reduce cost by \$100/gsf	Clarifies and amends list of Business occupancies to be inclusive of lithium-ion or lithium metal battery research and development. Addresses tendency of code officials to default these processes to Group H occupancy.
G32-21	304.1	Modified: Electronic data entry is considered a Group B occupancy. Change from “processing” to entry.		X			Clarifies and amends list of Business occupancies to be inclusive of electronic data entry uses not limited to processing.
G32-21, F186-21 Part II	306.2	Modified: Beverages over 20-percent alcohol content in factory use not otherwise considered low-hazard (Group F-2) are considered Group F-1 occupancy. Up from 16-percent.		X			Increased threshold allows more facilities to be classified under F-2 occupancies. Per recent FM Global testing proving that 16% was too conservative. The new 20% is more consistent with IFC Ch 32 sprinkler requirements.
G32-21, F186-21 Part II	306.2	Modified: Energy storage systems and equipment containing lithium-ion or lithium metal batteries are considered a Group F-1 occupancy.	X			Reduce cost by \$100/gsf	Clarifies and amends the list of moderate-hazard factory industrial occupancies. Addresses tendency of code officials to default these processes to Group H occupancy.
G32-21, F186-21 Part II	306.2	Modified: Vehicles powered by lithium-ion or lithium metal batteries are considered a Group F-1 occupancy.	X			Reduce cost by \$100/gsf	Clarifies and amends the list of moderate-hazard factory industrial occupancies. Addresses tendency of code officials to default these processes to Group H occupancy.
G32-21, F186-21 Part II	306.3	Modified: Beverages up to and including 20-percent alcohol content in factory use are considered Group F-2 occupancy. Up from 15-percent.		X			Increased threshold allows for more facilities to be classified under F-2 occupancies. Per recent FM Global testing proving that 16% was too conservative. The new 20%

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
							is more consistent with IFC Ch 32 sprinkler requirements.
G36-21, F192-21	Table 307.1(1)	Modified: Maximum allowable quantity for Flammable Gases is now further broken down by Class 1A, 1B (High BV), and 1B(low BV).	X			Reduce cost by \$50/gsf.	Flammable gases are no longer classified by just their state (Gaseous or liquified). Properties of the gases, including burning velocity now govern the required MAQ and subsequent protection required. This takes on a more specified approach and lowers the cost of construction for category 1b (low BV) flammable gas. No change for Category 1B (High BV).
F197-21	307.1	Modified: Hazardous materials stored or used on top of roofs or canopies are classified as rooftop storage areas. Change from outdoor storage area.		X			Clarifies the intention of designated rooftop storage areas protection with regards to MAQ and other requirements rather than other outdoor storage. Approach is consistent with new section in IFC pertaining to rooftop storage.
G36-21, F192-21	Table 307.1(1) & 307.1(2)	Added: Note C requires reference to Section 428 and Chapter 38 of IFC for specific requirements on storage of hazardous materials in Group B higher education laboratories.		X			Clarifies the type of stored or displayed materials which must apply specific requirements of Section 428 and Ch 38 IFC
G36-21, F192-21	Table 307.1(1)	Added: Note N requires reference to Section 414.2.5.2 for specific requirements on storage of flammable and combustible liquids in Group M occupancy wholesale and retail sales use.		X			Clarifies the type of stored or displayed materials which must also apply specific requirements of Section 414.2.5.2
G36-21, F192-21	Table 307.1(1)	Modified: Note M requires reference to Section 414.2.5.2 for specific requirements on storage or display of oxidizers, unstable (reactive) materials, and water-reactive materials in Group M or Group S occupancies .		X			Clarifies the type of stored or displayed materials which must also apply specific requirements of Section 414.2.5.2

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G36-21, F192-21	Table 307.1(1)	Added: Note P defines “High BV” and “Low BV” for categorizing of flammable gases.		X			Defines new metric for categorizing flammable gases when identifying maximum allowable quantities.
G36-21, F191-21	307.1(2)	Modified: Note F requires reference to Section 414.2.5.1 for specific requirements on storage or display of highly toxic and toxic materials in Group M or Group S occupancies.		X			Clarifies the type of stored or displayed materials which must also apply specific requirements of Section 414.2.5.1
G36-21	307.1.1	Modified: For situations involving storage, use and handling of hazardous materials other than Group H, they are now considered “Occupancy Exemptions” and listed in a table format based on material classification, occupancy and application. Occupancy Exemptions must also apply to IFC where applicable. Occupancy Exemptions allow for situations listed to not contribute to maximum allowable quantities calculations. This section no longer exempts the listed uses from classifying as Group H and classifying them based on their most closely resembled occupancy. A maximum allowable quantity evaluation is required for occupancy classification.		X			Clarity is given to specific situations in which an occupancy or application involving hazardous materials is exempt from contributing to the maximum allowable quantities.
G40-21	307.3.1	Added: Division 1.4 explosive materials are allowed in Group H-3 occupancies.		X			Defines allowable occupancy classification of H-3 for articles regulated as Division 1.4 explosives. This approach adds consistency with IFC as Division 1.4 explosives are always considered to be a minor explosion hazard.
G41-21	307.4	Modified: Buildings or structures containing materials with deflagration hazard, including Category 1A flammable gases, and now only Category 1B flammable gases with burning velocity greater than 3.9 in/s are considered a Group H-2 occupancy.	X			Reduce cost by \$50/gsf	Clarifies and amends the list materials considered in defining Group H-2 occupancies. Modifications to the use group for Group 1B (low BV) flammable gas lowers the cost of construction.

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G41-21	307.4	Modified: Buildings or structures containing materials that readily support combustion or pose a physical hazard, now including only Category 1B flammable gases with burning velocity of 3.9 in/s or less are considered a Group H-3 occupancy.	X			Reduce cost by \$50/gsf	Clarifies and amends materials list considered in defining Group H-3 occupancies. Modifications to the use group for Group 1B (low BV) flammable gas lowers construction cost.
Section 310: Residential Group R							
G43-21	310.2	Modified: Lodging houses with more than five guestrooms are considered Group R-1.		X			Clarifies and amends list of Group R-1 occupancies to have consistent terminology with IRC.
G45-21	310.3	Modified: Congregate living facilities (nontransient) with more than 16 occupants including those for emergency services living quarters are considered Group R-2.		X			Clarifies and amends the list of Group R-2 occupancies. Helps classify living quarters for fire stations as Group R-2 and expands to other alike services.
G43-21	310.3	Modified: Hotels and Motels (nontransient) with more than five guest rooms are considered Group R-2.		X			Clarifies and amends the list of Group R-2 occupancies for consistent terminology with IRC.
G45-21,	310.4	Modified: Congregate living facilities (nontransient) with fewer than 16 occupants including those for emergency services living quarters are considered Group R-3.		X			Clarifies and amends list of Group R-3 occupancies. Helps to classify living quarters for fire stations as Group R-3 and expands to other alike services.
G43-21	310.4	Modified: Hotels and Motels (nontransient) with fewer than five guest rooms are considered Group R-2.		X			Clarifies and amends the list of Group R-3 occupancies for consistent terminology with IRC.
G46-21	310.4.2	Modified: Owner-occupied lodging houses with five or fewer guest rooms are no longer limited to 10 or fewer total occupants. They are now permitted to be constructed per IBC or IRC provided they are equipped with sprinkler system in accordance with IRC Section P2904.		X			Eliminates the occupant load limitations for lodging houses. Adds a consistent approach with IRC.
F186-21 Part II	311.2	Modified: Storage of alcohol beverages over 20% are considered a Group S-1 occupancy. Up from 16%.		X			Clarifies and amends the list of moderate-hazard storage occupancies.

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G32-21	311.2	Modified: Storage of lithium-ion or lithium metal batteries, as well as vehicle repair garages for vehicles powered by lithium-ion or lithium metal batteries are considered a Group S-1 occupancy.	X			Reduce cost by \$100/gsf	Clarifies and amends the list of moderate-hazard storage occupancies. Addresses tendency of code officials to default these processes to Group H occupancy.
F186-21 Part II	311.3	311.3 Modified: Storage of alcohol beverages up to and including 20% (regardless of container material) are considered a Group S-2 occupancy. Up from 16%.		X			Clarifies and amends the list of low-hazard storage occupancies. Increased threshold allows for more facilities to be classified under S-2 occupancies.
G48-21	311.2	Added: Aerosol cooking spray, plastic aerosol PA3 added to list of moderate-hazard storage, Group S-1.		X			Adds designation for aerosols not previously addressed in occupancy classification. Provides consistency with requirements in IFC.
G52-21	402.8.5	Modified: For an Open Mall, the maximum travel distance is 200 ft measured to the perimeter line or an exit. Clarifies the travel distance may also be measured to a defined exit, not only the perimeter line in an open mall.		X			Provides an editorial clarification without code intent change. Open and Closed Malls can both terminate travel distance at a defined exit.
N/A	403.2.2.1	403.2.2.1 Modified: Section title revised to wall assembly materials. Section now governs requirements for panels with both soft body and hard body impact classification for interior exit enclosures and elevator hoistways.		X			Reorganization of section on interior stairway and elevator hoist way construction without code intent change.
N/A	403.2.2.4	Added Section: Glass Wall assemblies complying with safety glazing impact requirements of CPSC 16 CFR 1201, Cat II or ANSI Z97.1, Class A satisfy the requirements for Section 403.2.2.1.		X			Provides an option for glass walls to meet impact construction requirements for interior exit stairways and elevator hoistways in high-rise applications.
G29-21	403.2.3	Modified: SFRM stands for Sprayed fire-resistive materials. Updated from fire-resistant.		X			Editorial clarification for updated definition of SFRM to align with IBC definition and industry terms.
G57-21	403.3.1	Modified: Section sub-divided into requirements for Buildings 420 ft or less and Buildings more than 420 ft. Additional language added to include option for sprinkler express risers.	X			Reduce cost by \$35/gsf	Reorganization to include subsections for buildings above and below 420 ft in height without code intent change. Added language

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
							clarifies intent of sprinkler system zones.
G57-21	403.3.1.1	Modified: Sub-section added for Buildings 420 ft or less: requires sprinkler systems to be supplied by a single standpipe or sprinkler express riser within each vertical water supply zone.		X			Provides new separate requirements in high-rise applications for buildings less than 420 ft in height. Clarifies original intent.
G57-21	403.3.1.3	Modified: Riser location requirements are clarified to account for standpipes or sprinkler express risers.		X			Clarification for term "risers" to both include standpipes and sprinkler express risers serving the sprinkler system to be consistent with NFPA 14 and industry standard.
G58-21	403.3.3	Modified: Section added clarification for hydraulically calculated systems, including hose stream requirement, must be in accordance with Section 903.3.1.1.		X			Clarification that NFPA 14 standpipe requirements were not intended to be included in this calculation without code intent change
G44-21 Part II	403.4.7	Modified: Exception 1 for smoke removal systems modified to be inclusive of dwelling units having an exterior wall to be permitted to be provided with 2 sq ft of venting area in lieu of area specified in parent section.		X			Clarification identifying defined dwelling units without code intent change.
G61-21	403.5.3	Modified: Stairway doors other than discharge doors may be locked from stairway side only if they are capable of unlocking without unlatching under the following new conditions: - Individually or simultaneously upon signal from fire command center. - Simultaneously upon activation of a fire alarm signal in an area served by the stairway. - Upon failure of the power supply to the lock or locking system.		X			Provides necessary addition to stairway door locking requirements to prevent trapping occupants inside stairs by tying into the fire alarm system. Allows for travel access between floors, which may be necessary for both occupants and emergency personnel.
G59-21	403.5.3.1	Modified: Added reference for stairway communication to be listed and in accordance with UL 2525 and installed in accordance with NFPA 72.			X	Add \$2000/story	Provides code alignment with NFPA 72 standards and UL Listing 2525.
G62-21	404.6	Modified: Exception 4 for atrium enclosures was changed to only apply for other than Group I-2 and Group I-1, Condition 2.		X			Provides code alignment with NFPA 101 standards, 2012 edition as adopted by the Centers for Medicare and Medicaid (CMS).

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G62-21	404.6	Modified: Exception 5 was added for Group I-2 and Group I-1, Condition 2 to not require a fire barrier between atrium and adjoining spaces, other than care recipient sleeping or treatment, for up to three stories of the atrium provided that such spaces are accounted for in the design of the smoke control system and do not provide access to care recipient sleeping or treatment rooms.		X			Design flexibility for exemption of required fire barriers in Atriums still remain for Group I-1 and Group I-2 under certain conditions. Provides code alignment with NFPA 101 standards, 2012 edition as adopted by the Centers for Medicare and Medicaid (CMS).
G63-21	404.10	Modified: Additional requirement, for exit stairways in atriums, is provided which requires the discharge from an exit stairway at the level of exit discharge to comply with Section 1028.1.		X			Clarification that exit stair can egress through a ground floor lobby.
G71-21	407.4.4.4	Added: New requirements for corridor width are provided for circulation paths within care suites.		X			Clarification is provided for corridor access areas newly defined as circulation paths. These areas do not need to comply with requirements for corridor or an aisle in I-2 occupancy. Provides code alignment with NFPA 101 standards, 2012 edition as adopted by the Centers for Medicare and Medicaid (CMS).
G76-21	410.2.1.1	Modified: Measurement of stage height clarified to be from lowest point on the stage floor to highest point of the underside of the roof or floor deck above. Key phrase "of the underside" added.		X			Provide clarification to clearly define stage height.
G79-21	410.2.4	Modified: Exception added for situations requiring proscenium wall in Type I buildings.	X			Reduce \$1000/lf/story	Exception allows continuity of 2-hr wall to be continuous from a 2-hr rated floor slab to the roof or 2-hr rated floor slab above in lieu of being continuous from foundation to the roof rather than continuing through floor levels which do not contain the stage.

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G82-21	410.4	Modified: Editorial change from the word “appurtenant” to “contiguous” to describe dressing rooms, scene docks, property rooms, workshops, storerooms and compartments typically accessory and adjacent to stages.		X			Provide clarification with no change to code intent.
G84-21	410.6	Added: Exception added where sprinklers are not required under catwalks and galleries where permitted to be omitted in accordance with Section 903.1.1.		X			Provide clarification and consistency with requirements from other sections of IBC and NFPA 13
G85-21	410.7	Removed: Section requiring standpipe systems.	X			Reduce \$25,000/standpipe	Standpipe system is not required unless other sections of the IBC require a standpipe system. Code requirement is obsolete and was previously intended for staff trained to use fire hoses.
G86-21 Part I	411.1	Added: Exception to comply with special amusement section added for Puzzle rooms provided with a means of egress that is unlocked, readily identifiable and always available.	X			Reduce \$25/gsf	Provided clarification to address where escape rooms and other puzzle rooms are not required to follow special amusement requirements.
G86-21 Part II	411.3	Modified: Language added to require detection and alarm systems throughout buildings containing special amusement areas and emergency voice/alarm communication system. Subsections added to clarify requirements for alarm pre-signal and activation.		X			Clarification provided to ensure detection and alarm systems are provided throughout the building, original intent has not changed.
G86-21 Part II	411.3.3	Modified: Language added to require emergency voice/alarm communication system to be audible throughout special amusement areas and is allowed to serve as public address system.		X			Provides clarification and design flexibility, original intent has not changed.
G86-21 Part I	411.5	Removed: Section on puzzle room exiting.		X			Requirements are accounted for and described in other sections of the code, this section is no longer necessary
G86-21 Part I	411.6	New: Flammable decorative materials must comply with Section 806.		X			Provides consistency with other applicable sections of IBC and IFC for better application.

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
F196-21	Table 414.2.5.1	Modified: Maximum allowable quantity of Class 3 oxidizers changed from 1350 lbs. (solid) to 1500 lbs. and 115 gal (liquid) to 150 gallons.		X			Increased allowable quantity for indoor/ outdoor control areas in Group M and S occupancies. Approach is to be consistent with industry standard container size and current practice. Currently containers are not being completely filled to meet the lower quantity requirement and more environmentally friendly.
F192-21	414.2.5.4	Added: Permissions for exceeding maximum allowable quantity without classifying the building/occupancy as Group H are now applicable to Category 1B (low BV) flammable gas which are stored and displayed per IFC requirements.	X			Reduce \$100/gsf	New approach to quantify flammable gas based off burning velocity properties allowing for greater design flexibility.
F192-21	Table 414.2.5.4	Added: Maximum allowable quantity Table added for low burning velocity Category 1B flammable gas in Group M and S occupancies.	X			Reduce \$100/gsf	New approach to quantify flammable gas based off burning velocity properties, which allows for greater design flexibility.
G93-21	Table 414.5.1	Added: Note J added to the table for Division 1.4 explosives. Table does not apply to Division 1.4G consumer fireworks.	X			Reduce \$100/gsf	Additional explosion protection required in this section no longer applies for consumer fireworks. Approach is to meet consistency with definitions for explosive in the IBC and IFC. Cost reduction is solely associated with 2021 IBC being incorrectly interpreted for 1.4G fireworks to require explosion control or be a detached building.
F196-21	Table 414.5.1	Added: Note K added to the table for Flammable gas deflagration systems. Requirements no longer apply for Category 1B flammable gasses with burning velocity not exceeding 3.9 in/s.	X			Reduce \$50/gsf	New approach to quantify flammable gas based off burning velocity properties, which allows for greater design flexibility.

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G93-21	Table 415.6.5	Added: Note E added to the table for Division 1.4 explosives. Table does not apply to Division 1.4G consumer fireworks.	X			Reduce \$100/gsf	Detached building required in this section for exceeding specified quantities no longer applies for consumer fireworks. Approach is to meet consistency with definitions for explosive in the IBC and IFC.
NA	415.11.1.1	Modified: Section is reorganized to add clarity. Values in Table 415.11.1.1 have been adjusted to allow an increased quantity of hazardous materials in a single fabrication areas.		X			Increased allowable quantities gives greater design flexibility for single fabrication areas in Group H-5 occupancies. Provides consistency with IFC. And NFPA 318.
G91-21	415.11.1.1.2	Removed: Hazardous production materials (HPM) stored in a single fabrication area must meet maximum allowable quantities.		X			There is no equivalent section in IFC. Removing the section provides consistency with IFC.
G44-21 Part 1	420.2	Modified: Section now is inclusive of walls separating dwelling units from sleeping units in the same building.		X			Addresses discrepancies from past code changes where situations were not accounted for regarding required separation.
G44-21 Part 1	420.3	Modified: Section now is inclusive of floor assemblies separating dwelling units from sleeping units in the same building.		X			Addresses discrepancies from past code changes where situations were not accounted for regarding required separation.
G96-21	423.4.1	Added: New requirements are provided for design occupant capacity for storm shelters for critical emergency operations.			X	Add \$25/gsf	Minimum requirements are now clearly provided for occupant capacity of emergency operations storm shelters.
G96-21	423.4.2	Added: New requirements are provided for location for storm shelters for critical emergency operations with regards to the building they serve.			X	Add \$50/gsf	Minimum requirements are now clearly provided for location of emergency operations storm shelters.
G94-21, G97-21	423.5.1	Removed: Required occupant load is no longer required to meet occupant load of the largest indoor assembly space.	X			Reduce \$50/gsf	Limits occupant load required in designed shelter for Group E occupancies. Changes approach to be consistent with shelters for outdoor

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
							venues which are not required to meet entire worst case population capacity.
G105-21	503.1.4.1	Added: Exception added for required guards to be greater than 48 inches when protecting the occupiable roof area where the roof deck is more than 75 ft above the lowest level of fire department access.		X			Provides an allowance for required guards to extend more than 48 inches on occupiable roofs considered situated outside of fire department access (more than 75 ft in height). Once the deck is higher than fire ladder access, there is no need to maintain fire department access to roof.
G116-21	506.3.3.1	Modified: Frontage increase must be based on the smallest public way or open space that is 30 ft or more, and the percentage of building perimeter having a minimum 30 ft public way or open space.		X			Clarification to avoid calculations that do not meet the intent of the code section.
G116-21	Table 506.3.3.1	Modified: Open space in table changed to 55 or greater at the highest possible values.		X			Clarification to address situations with greater than 60 ft of open space.
G117-21	507.3	Modified: Language provided to clarify Group F-2 or S-2 buildings more than one story above grade plane and of any construction type apply to this section.		X			Editorial clarification without code intent change
G123-21	508.4.4	Added: Exception stating thermal barriers are not required on top of horizontal assemblies serving as occupancy separations.	X			Reduce \$10/gsf/story	Thermal barriers not required for topside of mass timber floors, unless 1-in of noncombustible material is still required for floors in Type IV-B.
G125-21	508.5	Added: Description of live/work units is given distinction between buildings constructed in accordance with IBC and IRC.		X			Clarification coordinating between the IBC and IRC.
G126-21 Part II	508.5.7	Modified: Fire protection requirements section changed to distinguish between IRC and IBC constructed live/work units.	X			Reduce \$25/gsf	Provides clarification for coordination between the IBC and IRC. States allowance for fire protection requirements in the IRC and IBC live/work unit buildings.
G128-21	Table 509.1	Table 509.1 Modified: Incidental uses under Group I -3, Group I-2 occupancies and		X			Editorial change providing coordination with federal

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		ambulatory care listed in the table now additionally state to provide an automatic sprinkler system with the rating.					requirements(K321). Provides alignment with NFPA 101 standards, 2012 edition as adopted by Centers for Medicare and Medicaid (CMS).
G123-21	509.4.1.1	Added: Exception stating thermal barriers not required on top of horizontal assemblies as incidental use separations.	X			Reduce \$10/gsf/story	Thermal barriers not required for topside of mass timber floors, unless 1-in of noncombustible material is still required for floors in Type IV-B.
G132-21, G130-21	510.2	510.2 Modified: Condition 5 has changed to be inclusive of all Group A occupancies.	X			Reduce \$50/gsf of Group A	Podium and other similar buildings now have allowances to meet Condition 5 without limiting assembly Group A occupancies to less than 300 people.
G136-21	Table 601	Modified: Note B added language for determining every part of the roof construction is 20 ft or more above “any floor or mezzanine.”		X			Clarification that where a mezzanine is less than 20 ft below the roof construction the roof rating reduction cannot be used.
G147-21	602.4.2.2.2	Modified: This section was rewritten to increase allowable percentage of unprotected portions of mass timber ceiling and walls to less than or equal to 100% and less than or equal to 40% respectively.	X			Reduce \$10/gsf of surface	Reduces required amount of noncombustible protection on walls and ceilings in Type IV-B construction per recent testing at ATF and RISE.
G148-21	602.4.2.2.2	Modified: This section was rewritten to specify mass timber walls and ceilings are limited to a percentage of the floor area in any dwelling unit “within a story” or fire area “within a story.”			X	Add 10/gsf of surface	May increase the required amount of noncombustible protection on walls and ceilings in mass timber construction.
G149-21	602.4.2.3	Modified: Language was added to refer to Section 602.4.2.2.2 for permitted areas of unprotected mass timber ceilings.		X			Clarification that Section 602.4.2.2.2 still applies where permitted.
G150-21	602.4.4.3	Modified: Editorial change to clarify the third protection alternative is specified to apply for combustible surfaces, not all surfaces within a concealed space.		X			Provides a clarification without code intent change.
G151-21	602.4.4.3	Modified: Editorial change to use the defined term “fire separation distance” in lieu of		X			Clarification without code intent change.

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		“horizontal separation” which may be interpreted differently.					
G156-21	603.1	603.1 Modified: Applications listed in this section for combustible materials now includes vapor retarders as required in Section 1404.3		X			This is common construction practice that is now clearly approved.
G17-21	603.1	Modified: Intumescent or mastic intumescent coatings terminology replaced with intumescent resistive materials terminology.		X			Editorial clarification for updated definition per IBC and industry terms.
FS8-21	704.1.1	Added: Section added to clarify exception is only permitted for supporting construction. Original intent remains the same.		X			Provides an editorial clarification without code intent change.
FS9-21	704.2	Modified: This section was reorganized for clarity and consistency with code language structure.		X			Provides a path for more consistent application of the code requirements.
FS18-21	705.6	Added: Section addresses the continuity requirement for exterior wall ratings.	X			Reduce \$10/gsf of exterior wall impacted	Requirements clarification for continuity of exterior wall ratings. Reduces confusion in design.
FS19-21	705.7.1	Added: Subsection added to address structural stability of floor assemblies in Type III construction.		X			Clarification for more uniform and consistent application.
FS29-21	706.1.2	Added: Section addresses discrepancy where NFPA 221 does not provide a required fire resistance rating. Section now deems fire walls to comply also with IBC Section 706.4 for required fire resistance rating.	X			Reduce \$1,000/lf/story	Clarification to fill in gaps between code standards to allow double fire wall conditions previously only addressed in NFPA 221.
G130-21	707.3.11	Added: Section added to address horizontal separation offsets where vertical offsets in a horizontal building separation must comply with Section 510.2.		X			Provides a clear direction, for a common industry practice, on how to construct a vertical offset of podium
FS38-21	707.5	Modified: Language changed in exception 3 to clarify extent of exit passageway to underside of “floor sheathing” in addition to roof sheathing, slab or deck.		X			Clarification without change of code intent.
FS41-21, FS42-21	707.6	Added: Protected opening exceptions 6, 7, and 8 added to include elevator car openings, openings serving shaft enclosures, and openings serving chute access or discharge room as described and permitted in this section.		X			Previously, it was impractical for shafts, chute access rooms, and chute discharge rooms to meet 25% length limitation for openings in fire barriers. Added exception addresses this issue which typically was ignored in design.

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FS43-21	707.8	Modified: Language changed to clarify joint protection requirements as they relate to all fire-resistance-rated wall assemblies.		X			Clarification without change of code intent.
G183-21 Part II	708.4.1	Added: Section added specifying continuity of fire partition walls enclosing elevator lobbies.		X			Clarification and consistency for elevator lobby protection.
G183-21 Part II	709.4.2	Modified: Smoke barrier walls enclosing areas of refuge or elevator lobbies are clarified to not require smoke and draft door assembly at each hoist way door where protected by an elevator lobby, or at each exit door opening into a protected lobby in addition to past permissions of this section.		X			Provide clarification and consistency for protection requirements of elevator lobbies.
FS48-21	709.5	Modified: Smoke barrier cross-corridor doors are not required to be positive latching, now regardless of whether permitted by manufacturers listing.		X			Clarification and consistency with Section 716 of IBC.
FS49-21	710.4	Added: Exception added addressing lay-in ceilings systems in Group I-2 occupancies, meeting the requirements of this section, are permitted in lieu of smoke partitions extending from floor slab below to floor slab, roof, or sheathing above.	X			Reduce \$50/gsf of wall surface area above ceiling	This change reflects current common practice in Group I-2 facilities. Provides code alignment with NFPA 101 standards, 2012 edition as adopted by Centers for Medicare and Medicaid (CMS).
G183-21 Part II	710.4.1	Added: Section added specifying continuity of smoke partition walls enclosing elevator lobbies.		X			Provide clarification and consistency for protection requirements of elevator lobbies.
FS51-21, FS53-21	712.1.3.2	Modified: This section was reorganized to be consistent with typical structure of code. Requirements for automatic shutters are now provided in listed format.		X			Provides clarification without change of code intent.
FS55-21	713.4	Added: Exception for shafts which are permitted to have their fire-resistance rating reduced in high-rise buildings in accordance with Section 403.2.1.2.		X			Clarification and cross-reference back to high-rise provision Section 403.2.1.2. Eliminates conflict between the two sections.
FS154-21	713.8	Modified: Language added to be inclusive of horizontal assemblies for penetrations in shaft enclosures.		X			Provides coordination between penetration requirements and language for shaft construction.

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
G180-21	713.14	Modified: Language added to be inclusive of hoistways for “other vertical access devices” which are not elevators or dumbwaiters.		X			Provides clarification without change of code intent and consistency with terminology for elevator protection.
FS60-21	714.3	Modified: Sleeves shall be installed in accordance with their manufacturer listing, or where listing systems are not used, they shall be securely fastened to the assembly penetrated.		X			Provides accurate and effective application with industry products and practice which may differ from previous generic code requirements.
FS64-21	714.5.1	Added: Exception 4 permits penetrations of concrete floors or ramps in parking garages/structures where penetration is between levels of parking areas.	X			Reduce \$200/ penetration/ level	Reduces required through-penetration firestop systems in parking garages/structures.
FS66-21	714.5.1.2	Added: Exception 4 permits penetrations in single concrete floor by several types of pipes, tubes, conduits, and vents less than 6-in diameter to not require T-rating. Further they are permitted to not be limited to a single concrete floor if total opening through each floor does not exceed 144 sq inches.	X			Add \$25/ penetration/ story	Expands existing exceptions and removes the requirement to insulate these penetrating items.
FS70-21	715.2	Modified: The section is reorganized for consistency with typical code structure. Section is expanded to specify and distinguish between “List system installation” and “Approved materials installation.”		X			Clarification for better enforcement and application.
FS75-21	715.4 715.5	Added: Exception added to not require an approved perimeter fire containment system for voids in floors within a single dwelling unit, floors and ramps in parking garages/structures, and mezzanine floors.	X			Reduce \$50/lf	Removes the requirement for approved systems at voids at curtain walls/floor intersections.
FS44-21, FS45-21	715.6	Added: Section addresses protection requirements for intersections at fire barrier and non fire-resistance-rated roof assemblies. This section was relocated from Section 707.9.		X			Section is now more appropriately positioned in the code to provide clarity.
FS84-21	716.2.2.1.1	Added: Exception added specifying elevator hoistway door openings protected in accordance with Section 3006.3 are not required to meet smoke and draft control provisions of this section.		X			Provides clarification on elevator hoistway doors having alternative means to comply with current code provisions.
FS85-21	716.2.6.1	Added: Exception 3 fire doors required for sole compliance with ICC 500 are not required to be self-closing.		X			Provides consistency between IBC and ICC 500

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
							for applicable fire doors in storm shelters.
FS88-21	717.2.4 717.2.4.1	Added: Section prohibits mechanical, electrical, and plumbing controls from being installed in air duct systems or dampers unless specified as permitted in product listing or associated with the air distribution system.		X			Provides necessary code requirement prohibiting materials or other utilities from interfering with operation of air distribution system.
FS91-21	717.6.1	Modified: Allows permission of a duct in Group I-2 and I-3 occupancies to penetrate up to 3 floors without a fire damper provided it meets the criteria of this section.	X			Cut \$200/penetration/story	Provides clarification and code alignment with NFPA 101 and NFPA 99. Provides code alignment with NFPA 101 standards, 2012 edition as adopted by Centers for Medicare and Medicaid (CMS).
FS96-21	718.2.1	Added: Fireblocking materials allow another option with item number 10, one thickness of 15.1 mm fire-retardant-treated wood structural panel complying with Section 2302.2		X			Provides greater design flexibility.
FS98-21	Table 721.1(2)	Added: Another tested assembly number 16 added to table for "Exterior walls rated for fire resistance from the inside only in accordance with Section 705.5."		X			Provides greater design flexibility. Adds another tested assembly for one-II construction.
FS100-21	Table 721.1(3)	Added: Another tested assembly number 31 added to table for ". Wood I-joist (minimum I-joist depth 9 1/4" with a minimum flange thickness of 1 1/2" and a minimum flange cross-sectional area of 2.25 square inches; minimum web thickness of 3/8") @ 24" o.c.		X			Provides greater design flexibility. Adds another tested floor assembly.
FS102-21	Table 722.2.1.4 (1) & (2)	Modified: Title changed and footnotes were added to clarify that these tables are for cast-in-place or CMU concrete walls and are not wall finishes.		X			Provides clarification on original code intent as well as industry standard.
FS103-21	Figure 722.5.1(2), (3) & 722.5.1.2.1	Modified: Removal of references to gypsum board throughout section to match new gypsum product definitions.		X			Removes redundant wording from the code.
G29-21	704.13, Figure 722.5.1(5), 722.5.1.1,	Modified: SFRM stands for Sprayed fire-resistive materials. Updated from fire-resistant.		X			Editorial clarification for updated definition of SFRM to align with IBC

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
	722.5.1.3, 722.5.1.3.2, 722.5.2.2						definition and industry terms.
G17-21	722.5.1.3, 722.5.2.2, 722.5.2.3	Modified: Intumescent or mastic intumescent coatings terminology replaced with intumescent resistive materials terminology.		X			Editorial clarification for updated definition per IBC and industry terms.
FS104-21	Table 722.6.2(1)	Modified: Title updated to clarify the table is applicable to wallboard membranes on wood frame.		X			Editorial clarification to coordinate with section 7.6 requirements.
FS105-21	Table 722.6.2(3)	Added: Two new products added as permitted exterior finishes: insulated vinyl siding and polypropylene siding.		X			Provides greater design flexibility. Adds additional tested exterior finishes.
FS106-21	Table 722.6.2(5)	Modified: Changes minimum density for insulation providing 15-minute fire rating.	X			Reduce \$5/gsf of assembly	Clarification for insulation options and cost reduction when mineral wool is used.
FS160-21	806.6.1	Added: Language addressing foam plastics used as interior trim must comply with Section 2604.2		X			Clarification on compliance with other requirements elsewhere in the code.
FS159-21	901.6.2	Removed: Sections duplicated from IFC are removed without substitution.		X			Provides a coordination between IFC and IBC.
F62-21	903.2	Modified: Language added to exception for required sprinkler systems, which specifies batteries not otherwise required to have automatic sprinkler system by Section 1207 of the IFC for energy storage systems.		X			Clarification for coordination between IBC and IFC.
F66-21	903.2.2.2	Added: Section specifying an automatic sprinkler system must be installed throughout fire areas for research and development or testing of lithium-ion or lithium metal batteries.			X	Add \$5/gsf of area requiring sprinklers	Provides requirements for facilities or areas involved with lithium-ion and lithium metal research, development, or testing.
F66-21	903.2.4	Added: Group F-1 facilities involved with manufacturing lithium-ion or lithium metal batteries for vehicles, energy storage systems, or equipment containing the batteries is required to have an automatic sprinkler system.			X	Add 5/gsf of area requiring sprinklers+ \$50k/ incoming service + \$100k/ fire pump	Provides requirements for facilities or areas involved with lithium-ion and lithium metal manufacturing.
F66-21	903.2.7.3	Added: Automatic sprinkler system is required for Group M facilities in room or space for storage of lithium-ion or lithium metal batteries.			X	Add 5/gsf of area requiring sprinklers+ \$50k/ incoming service +	Provides requirements for facilities or areas involved with lithium-ion and lithium metal storage in Group M occupancy.

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
						\$100k/ fire pump	
F66-21	903.2.9 903.2.9.1	Added: Automatic sprinkler system is required for Group S-1 facilities and repair garages used for storage of lithium-ion or lithium metal batteries, or for repair of vehicles powered by lithium-ion or lithium metal, in an area exceeding 500 sq ft.			X	Add 5/gsf of area requiring sprinklers+ \$50k/ incoming service + \$100k/ fire pump	Provides requirements for facilities or areas involved with lithium-ion and lithium metal storage, and vehicle repair.
F71-21	903.3.1.1. 3	Added: Sprinkler systems required for areas containing lithium-ion or lithium metal batteries must be designed based on fire tests conducted or witnessed by an approved testing laboratory.		X			Provides coordination and consistency with NFPA 13. Note that cost increase would occur if this requirement was not previously followed.
F72-21	903.3.1.2	Added: Language in Condition 2 added to apply where the roof assembly is less than 45 ft above the lowest fire department vehicle access.		X			Clarification which closes a loophole in design previously allowing oversized attic and mezzanine floors in buildings protected by NFPA 13R.
F73-21	903.4.1 904.2	Modified: Exception 2 added condition where backflow prevention device test valves are locked in open position unless otherwise required to be electronically supervised by a required fire alarm system. Language added was relocated from Section 904.2.		X			Clarification and fixes conflict where all limited area systems could be considered exempted from any electronic supervision.
F73-21	903.4.3	Modified: Language added to section to require visual alarm devices where audible is currently required. Waterflow devices and supervision devices must be powered by FACU or fire alarm system. Added: Exception for one and two-family dwellings	X			Reduce \$500	Clarification to this section and exception for one and two-family dwellings to no longer require exterior waterflow alarms.
F76-21	904.12	Added: This section addresses hybrid fire extinguishing systems to be in accordance with NFPA 770.		X			Addresses and permits the adoption of hybrid fire extinguishing systems.

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
							Provides greater design flexibility.
F77-21	904.14.1	Added: Exception 2 permits a manual activation device to be installed in an approved unobstructed location near a means of egress where otherwise it cannot meet the distance requirements for install.		X			Provides greater design flexibility for locating manual activation devices for commercial cooking systems.
F78-21	905.3	Added: Exception for Group R-2 townhouses.		X			Provides clarification that standpipe systems are not required in Group R-2 townhomes as defined by IBC.
G85-21	905.3.4	Removed: Standpipes no longer required on stages, platforms, and technical production areas. The intent of the requirement was previously for trained personnel to operate standpipes with hose connections. Intent no longer applies.	X			Reduce \$25,000/standpipe	Reduces cost of construction as standpipes are no longer required.
F81-21	905.4	Added: Language added to require Class 1 standpipe hose connections at exterior stairways. This requirement is re-instated after being removed in the 2015 edition of IBC			X	Add \$5,000/stairway/standpipe	Requires additional hose connections in buildings with exterior stairways.
F86-21	907.2.1	Added: New exceptions for Group A manual fire alarm systems were provided, including Group A-5 where conditions are met, and temporary Group A-5 where conditions are met.	X			Reduce \$5/gsf for Group A-5 +\$10k/FACP +\$2k/ GAP	Provides exception to omit voice alarm communication and fire alarms systems in certain Group A-5.
F88-21	907.2.2	Added: Fire alarm system activated by heat or air sampling is required in areas used for research and development for lithium-ion and lithium metal batteries.			X	Add \$5/gsf of area protected + \$10k/ Air Sampling Panel + \$10k/FACP if heat	Provides requirements for facilities or areas involved with lithium-ion and lithium metal research, development, or testing.
F88-21	907.2.4.1	Added: Fire alarm system activated by heat or air sampling is required in areas used for manufacturing of lithium-ion and lithium metal batteries.			X	Add \$5/gsf of area protected +\$10k/ Air Sampling Panel +\$10k/FACP if heat	Provides requirements for facilities or areas involved with lithium-ion and lithium metal manufacturing.

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
F88-21	907.2.7.2	Added: Fire alarm system activated by heat or air sampling is required in areas used for storage of lithium-ion and lithium metal batteries in Group M occupancy.			X	Add \$5/gsf of area protected +\$10k/ Air Sampling Panel +\$10k/ FACP if heat	Provides requirements for facilities or areas involved with lithium-ion and lithium metal storage in Group M occupancy.
F88-21	907.2.10.2	Added: Fire alarm system activated by heat or air sampling is required in areas used for storage of lithium-ion and lithium metal batteries in Group S occupancy.			X	Add \$5/gsf of area protected +\$10k/ Air Sampling Panel +\$10k/ FACP if heat	Provides requirements for facilities or areas involved with lithium-ion and lithium metal storage, and vehicle repair.
F88-21	907.2.10.1	Added: Fire alarm system that activates occupant notification system required for in Group S public and self-storage occupancies 3 stories or more for interior corridors and common areas.			X	Add \$5/gsf of area protected +\$10k/ Air Sampling Panel +\$10k/ FACP if heat	Provides requirements for Group S public and self-storage facilities.
F89-21	907.2.11.3	Modified: Smoke alarms must be a minimum 10 ft horizontally from permanent cooking appliances unless meet exceptions of this section. Exception allows smoke detector within 6-10 ft from cooking appliance, where necessary by other portions of the IBC.		X			Provides coordination between IC,IFC and NFPA 72 and UL 217.
G86-21 Part II	907.2.12	Removed: Section now refers to special requirements Section of 411.23 for fire alarm requirements in special amusement buildings.		X			Clarification for better application.
F96-21	909.18.3	Modified: Language added to require dampers to be tested and installed in accordance with NFPA 80 and NFPA 105.		X			Coordination between ICC and NFPA for better application.
FS112-21	909.20.4	Removed: Mechanical ventilation alternative is removed from the code.	X			Minimal since rarely used.	Eliminates the mechanical ventilation alternative, which is a more expensive option rarely used in practice.
FS115-21	909.20.5.4	Added: Provision requiring smoke detection under pressurized stair and vestibule alternative design method. Fan system must			X	Add \$500/fan	Maintains consistency with NFPA 92 and prevents smoke from

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		be equipped with smoke detector to automatically shut down system.					entering the stair enclosure.
FS116-21	909.21	Modified: Language added to consider effects of multiple smoke control systems in design in accordance with Section 909.4.7		X			Clarification from other provisions of the code for better application of code requirements.
FS118-21	909.21.6	Modified: Activation of elevator pressurization system is no longer required to activate upon the building fire alarm system.	X			Reduce \$5000/ elevator	Reduces cost for design, installation, and testing of elevator pressurization system.
F99-21	912.5	Added: Sections listing specified requirements for signs including lettering, where serving multiple buildings, serving multiple or combined systems, and indication of pressure.		X			Clarification in IBC, IFC for better application of code requirements from NFPA 14.
F102-21	915.1	Added: Exception for Group S, Group F , and Group U occupancies not normally occupied do not require carbon monoxide detection. Modified: Section re-organized CO detection is required as specified in this section and if also under any of the following conditions: <ul style="list-style-type: none"> - Building contains CO source - Building contained or supplied by CO-producing fuel source - Buildings with attached private garages - Buildings that have a CO-producing vehicle used in the building 			X	Add \$250/ detector	Restructures and changes approach to require CO in all applicable buildings.
F102-21	915.2	Modified: Section on locations for CO detection restructured with intent to require CO detection anywhere a carbon monoxide producing device is present.			X	Add \$250/ detector	Provides restructure and changes approach to require CO in all applicable buildings.
F102-21	915.3	Modified: Section on alarms for CO detection restructured with intent to require CO detection anywhere a carbon monoxide producing device is present. Exceptions are listed where alarms are not required following conditions of this section.			X	Add \$250/ detector	Provides restructure and changes approach to require CO in all applicable buildings. Revisions are more consistent with NFPA 72 requirements.
F105-21	917.2	Added: Group E occupancies with more than 500 occupant load require a risk analysis in accordance with NFPA 72 to determine need for mass notification.			X	Add \$5,000 for analysis	Change is to enhance public safety from all types of emergencies to reduce injuries and fatalities in schools.
E38-21	1003.3.1	Modified: Language added to be inclusive of other alike devices to door closers and stops,		X			Clarification without code intent change.

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		including: overhead door stops, frame stops, power door operators, and electromagnetic door locks.					
G99-21 Part IV	Table 1004.5	Added: Occupant load factor is 300 sq ft/ pers for Information technology equipment facilities.		X			Occupant load factor more accurately represents current condition of information technology equipment facilities and areas.
E15-21	1006.2.2.2	1006.2.2 Modified: Egress from refrigerated rooms or spaces is clarified to include the numbers, configurations, and types of components of exits or access to exits.		X			Clarification for better enforcement and application.
E18-21	1006.3.2 Exception (5)	Modified: Language added to exception to be inclusive of smoke-protected assembly seating. Previously only open-air assembly seating was accounted for in this section.		X			Clarification for consistency with industry construction practice.
E21-21	Table 1006.3.3	Modified: Language added to be inclusive of occupiable roofs as defined by IBC		X			Consistency with other sections and clarifies conditions for exit from rooftop decks, balconies and other spaces defined as occupiable roofs.
E21-21	Table 1006.3.4 (1)	Added: Language added to be inclusive of occupiable roofs for individual dwelling units. Footnote C specifies for occupiable roofs not serving individual dwelling units to use Table 1006.3.4(2)		X			Clarification for conditions in which one exit is allowed for occupiable roofs. This change improves application of the code.
E21-21	Table 1006.3.4 (2)	Added: Language added to be inclusive of occupiable roofs for other occupancies not specified in Table 1006.3.4(1) .		X			Clarification for conditions in which one exit is allowed for occupiable roofs and improves code application.
E25-21	1008.2	Added: Exception for self-service storage units 400 sq ft or less in area and accessed from the exterior of the building.		X			Clarification for consistency in code interpretations concerning illumination in self-service storage units.
E24-21	1008.3	Modified: Section on illumination in means of egress required by emergency electrical systems reorganized into a list format.		X			Clarification without code intent change.
E28-18	1009.2.1	1009.2.1 Modified: Elevators are required where an accessible occupiable roof is above a story that is 3 or more stories above the level of exit discharge.		X			Clarification of original code intent for occupiable roofs to be provided accessible elevators if above 3 rd story of a building above level of exit discharge providing

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
							consistent code definition for occupiable roofs.
E34-21	1009.2.2	Added: Section on where maneuvering clearances apply to doors in an accessible route of egress.		X			Clarifies where ICC A117.1, for door maneuvering clearances, apply to doors in an accessible route of egress. Provides consistency with code interpretations for more streamline design process.
G59-21	1009.8.1	Modified: Language added requiring two-way communication systems to be listed in accordance with UL 2525 and installed in accordance with NFPA 72.			X	Add \$500/ panel	Consistency between NFPA 72 and IBC requirements for installation of these systems. Ensures two-way communication systems are monitored for integrity.
E37-21 Part 1	1009.11	Modified: Language added to expand requirements of signage with instructions to also apply at locations requiring two-way communication systems.		X			Provides clarification for required instructional signage. Improves effective application of two-way communication system.
E39-21	1010.1.1	Modified: Size of door exceptions removed for revolving doors, power operated doors, and walk-in freezer and cooler doors. Clarification added addressing, sauna, dressing, toilet room doors “which are not required to be accessible” may meet the exception in this section. Added exception specifically calling out shower doors complying with Section 421.4.2 of the International Plumbing Code.	X			Reduce \$500/ location	Clarifies requirements for shower doors and further allows sliding shower doors complying with applicable codes for greater design flexibility.
E43-21	1010.2.1	Modified: Exception added for doors required to unlatch in one motion for doors with manual bolts, automatic flush bolts and constant latching bolts as permitted in Section 1010.2.4 Item 4. This exception is inclusive of previous exceptions 2 and 3 as part of a reorganization of this section.		X			Provides clarification and guidance on permitted locking hardware. Provides consistency with updated definition for term “manual bolt.”
E44-21	1010.2.3	Modified: Exception 1 changed to address locks used only for security purposes and not used for normal operation. Added Exception 2 specifically addresses doors/gates requiring restricted access for spas and pools governed		X			Provides clarification and guidance on permitted hardware height.

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CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		by International Swimming Pool and Spa Code.					
E45-21, E46-21	1010.2.4	Added: Item 3 now permits the main doors of a space to be locked with key-operated lock not allowing ingress or egress from certain occupied occupancies. Item 4 modified to be inclusive of manual bolts and constant latching bolts on the inactive leaf in accordance with newly added Table 1010.2.4. Item 5 modified to eliminate occupant load requirement of 10 or less in coordination with updated Section 1006 and current requirements.		X			Provides clarification and guidance on permitted locking hardware.
E43-21	Table 1010.2.4	Added: Table identifying permitted uses and requirements for dead bolts, manual bolts, and automatic flush bolts on inactive leaves. Applications of previous Section 1010.2.5 on manual bolts is incorporated in the Table.		X			Clarification for dead bolts, manual bolt locks, and automatic flush bolts on inactive leaves permissions and requirements. Improve application and enforcement.
E47-21	1010.2.6	Added: Subsection applying three conditions for locking stairway exit doors from the side opposite of the egress side. Conditions include capability from fire command center, activation of fire alarm signal where fire alarm is present in area served by stairway, and failure of power supply.		X			Ensures locks on stairway exit doors fail safe for use by emergency personnel on the side opposite of egress.
E48-21	1010.2.9	Modified: Exception 2 no longer is inclusive of electronically locked doors in accordance with Section 1010.2.12, sensor-release doors.			X	Add \$500/door	Provides clarification to prevent code misinterpretations. Reverts back to 2015 Edition of IBC.
E52-21	1010.2.11 1010.2.12.1 1010.2.13	Modified: Language added requiring sensor release of electronically locked doors, controlled egress doors in Group I-1 and I-2, and delayed-egress locking systems to be listed in accordance with either UL 294 or UL 1034.		X			Provides clarification and consistency with code language used. Provides greater design flexibility with another permitted listed assembly.
E56-21	1010.2.14	Added: Section permitting locking of exit access doors in elevator lobbies where conditions are met.			X	Add \$1000/door	Presents design alternative to requiring elevator lobbies have access to at least one exit complying with chapter 10. Elevator lobby doors

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
							must meet new locking provisions.
E39-21	1010.4	Removed: Exception for horizontal or swinging gates exceeding 4 ft width in walls or gates surrounding stadiums.		X			Provides clarification for better application without code intent change. Doors in this application are already without maximum width requirements.
E64-21	10.11.5.5.1	Added: Exception stating nosing projection is permitted to exceed the maximum projection where solid risers are not required		X			Provides greater design flexibility allowing stair treads to be larger.
E60-21	1011.5.2 Exception 3	Modified: Language added to exclude Group R-2 occupancies, required to be accessible or type A dwelling or sleeping units, from the exception.			X	Add \$1000/ stair flight	Aligns IBC with the 2010 ADA standards and the ABA stands where no exception is stated for stairs within dwelling units or sleeping units that must be accessible.
E69-21	1013.2	Added: Exception stating low-level exit signs are not required in Group R-1 occupancies equipped throughout with automatic sprinkler system.	X			Reduce \$250/ sign	Reduces cost of providing low level exit signage in Group R-1 occupancies.
E71-21	1013.5.1	Added: Subsection addressing photoluminescent exit signs requiring the signs be provided with an illumination source to charge the sign in accordance with manufacturer's listing.		X			Provides code language addressing concern over photoluminescent signage not emitting enough light to be effective. Creates standard practice for better code application.
E73-21	1014.3	Added: Specification for lateral location of handrails must be 6 in or less from the edge of walking surface. Where handrails project into the walking surface they must comply with Section 1014.9.		X			Provides an added level of safety for occupants needing to use the handrails. Lateral location of handrails is now regulated by IBC.
E73-21	1014.5	Modified: Language added for clarification of the code section intent. Language added to exclude dwelling units, required to be accessible or type A dwelling or sleeping units, from the list of exceptions.	X			Reduce \$100/ landing	Provides clarification to allow interruption of continuous handrail by newel post at a turn or landing. Aligns IBC with ADA standards and the ABA stands and Section 504.
E76-21	1014.7	Modified: Language added stating extension of handrails must also extend the required		X			Provides clarification and consistency with other

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		minimum length before any change in direction or decrease in the required clearance by Section 1014.5 or 1014.8					sections of the code for better application of requirements.
E77-21	1014.8	Added: Exceptions for a decrease in the clearance due to curvature or angle of handrail returns, and for mounting flanges not more than ½ inch in thickness at returned ends of handrails.		X			Provides design flexibility to meet common industry material and installation practice.
G106-21 Part II	1015.2	Added: Language requiring guards at the perimeter of occupiable roofs. Exception 9 added for portions of occupiable roofs less than 30 inches measured vertically to adjacent unoccupied roof areas where approved guards are present. Exception 10 added for portions of occupiable roof where an approved barrier is provided.			X	Add \$100/lft	Provisions for guard rails on occupiable roofs are clarified in this code section.
E83-21	1015.8	Modified: Section reorganized to clarify the window opening protection requirements based on height above grade of an operable window. Section now specifies height is to be measured at the bottom of the clear opening instead of top of the sill of the opening.		X		N/A	Clarification for better application without code intent change.
E85-21	1016.2	1016.2 Modified: Section now specifies what is permitted in a Group H occupancy.		X			Clarification for better application without code intent change. Provides consistency with other sections of the code allowing electronically locked egress doors from elevator lobbies.
E86-21	Table 1017.2, 1017.2.3	Added: Increased allowance of 300 ft exit access travel distance in Group H occupancy following Section 1017.2.3. Section 1017.2.3 permits 300 ft maximum exit access travel distance in fabrication areas of Group H-5 occupancies where conditions of the section are met.	X			Reduce \$5/gsf of Group H-5 area	Provides greater design flexibility.
E88-21	1019.3	Modified: Language added to clarify exception 1 to apply for exit access stairways and ramps within two-story openings complying with Section 712.1.9		X			Clarification for better enforcement and application and adds consistency between sections of the IBC.
NA	1020.2.1	Modified: Language added for elevator hoist way doors in elevator hoist way enclosures to		X			Provides clarification for better enforcement and

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		be fire-resistance rated and protected in accordance with Section 716.					application and adds IBC consistency.
E96-21	1023.5	Added Item 8: Structural elements, such as beams or joists, supporting a roof at the top of an interior stair or ramp are permitted penetrations into or through an interior exit stairway.	X			Reduce \$100/lf of stair enclosure perimeter	Simplifies framing at exit enclosures and provides greater design and installation flexibility.
E97-21	1023.7	Modified: Section now additionally requires roof assemblies or exterior walls adjacent to interior exit stair/ramp enclosures, in some cases, to be 1-hr rated with ¾-hr rated openings.			X	Add \$100/gsf of exposed surfaces	Addresses a concern over designs where interior exit enclosures are exposed to fire or smoke from adjacent roof assemblies.
E96-21	1024.6	Added Item 7: Structural elements, such as beams or joists, supporting a floor or roof at the top of an exit passageway are permitted penetrations into or through an exit passageway.	X			Reduce \$100/lf of EP enclosure perimeter	Simplifies framing at exit passageway (EP) enclosures and provides greater design and installation flexibility.
E100-21	1027.2	Modified: Removed language regarding “not high-rise buildings,” so that exterior required exit stairways are simply not to be used for occupancies other than Group I-2 in building exceeding 6 stories above grade.		X			Provides clarification for buildings 7-8 stories in height and are considered not high-rise.
E105-21	1029.3	Added: Exception 3 for Egress courts located at grade and provide direct and unobstructed access to the public way through two or more independent paths.	X			Reduce \$500/opening	Removes requirement for opening protection when alternative egress paths are provided. Provides greater design flexibility.
E108-21	1030.8	Modified: Language added to clarify common path of egress shall not exceed 30 ft from any seat from within a room or space used for assembly purposes having fixed seating.		X			Editorial clarification without code intent change. Eliminates conflict with IBC Section 1030.1
E109-21	1030.9.5	Modified: Dead-end aisles are limited to 20 ft. Exceptions are permitted where seats are beyond 20 ft given the conditions of the section. Previously permissions were granted for dead-end aisles beyond 16 rows (which is typically 50-60 ft).		X			Provides a change measuring dead-end aisles which is more consistent with other sections of the IBC and more accurate to the code intent.
E110-21	1030.9.5	Added: Exception for Dead-end aisles serving fewer than 50 seats are permitted in accordance with Section 1030.8 Common path of egress travel.		X			Provides a change measuring dead-end aisles which is more consistent with other sections of the IBC and more accurate to the code intent.
E38-18	1031.2	Modified: This section number was revised to permit required openings from basements to		X			Provides clarification in applying exceptions of this

Table 9. 2024 Fire Protection and Life Safety Changes Cost Impact¹

CODE CHANGE #	IBC SECTION #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		lead to an emergency escape and rescue opening (EERO) at an egress balcony that leads to a public way.					section and allows the use of windows as EERO to access egress balconies.

NOTE: 1. Table 9 summarizes the key fire protection and life safety related changes that have occurred between the 2021 and 2024 Editions of the International Building Code (IBC), as they relate to the five sample building types studied. Any updates that made the IBC code more consistent with NFPA 13, 70, 72, or 101 was noted as no cost change as compliance with those requirements were already required in Florida.

There were many overall definition changes that occurred throughout the IBC to coordinate terms with industry standards such as changing sprinkler to “automatic sprinkler system” throughout. Group H occupancy requirements received a major overhaul including re-defining Type IB flammable liquids into two new categories with separate requirements. As lithium-ion batteries have been addressed more clearly throughout the IBC including coordination with the IFC to provide guidance for typically seen uses including research, manufacturing, and storage. Many Group I-2 requirements have been adjusted in order to more closely match the Centers for Medicare and Medicaid (CMS) requirements and are not considered added cost as these occupancies already were required to meet the most stringent requirements of IBC and NFPA 101. Cost change was only considered for changes where IBC was previously the stricter requirement.

For the IBC changes that reference other ICC codes or NFPA 1, 70, or 101, a cursory review of the respective ICC Code, or the NFPA Code or Standard section that is referenced by the IBC change was conducted for the degree to which it affects the cost impact to the five buildings considered as part of this study.

APPENDIX J

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
S1-21	<p>Revise as follows: [BF] 1505.1 General. Fire classification of <i>roof assemblies</i> shall be in accordance with Section 1505. Roof assemblies shall be divided into the classes defined in this section. The minimum fire classification of roof assemblies installed on buildings shall comply with Table 1505.1 based on type of construction of the building. Class A, B and C <i>roof assemblies</i> and <i>roof coverings</i> required to be listed by this section shall be tested in accordance with ASTM E108 or UL 790. In addition, <i>fire-retardant-treated wood roof coverings</i> shall be tested in accordance with ASTM D2898. The minimum roof coverings installed on buildings shall comply with Table 1505.1 based on the type of construction of the building.</p> <p>Exception: <i>Skylights and sloped glazing</i> that comply with Chapter 24 or Section 2610.</p> <p>TABLE 1505.1 MINIMUM ROOF ASSEMBLYCOVERING CLASSIFICATION FOR TYPES OF CONSTRUCTION^{a, b} Portions of table not shown remain unchanged.</p>		X			Clarification.
S1-22	<p>Delete without substitution: 1502.3 Scuppers. Where <i>scuppers</i> are used for secondary (emergency overflow) roof drainage, the quantity, size, location and inlet elevation of the <i>scuppers</i> shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1611.1. <i>Scuppers</i> shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when locating and sizing <i>scuppers</i>.</p>		X			Eliminates redundancy.
S2-21	<p>Revise as follows: TABLE 1505.1 MINIMUM ROOF COVERING CLASSIFICATION FOR TYPES OF CONSTRUCTION^{a, b} Portions of table not shown remain unchanged. b. Nonclassified roof coverings shall be permitted on buildings of Group R-3 and Group U occupancies, where there is a minimum fire- separation distance of 6 feet measured from the leading edge of the roof.</p>			X	In some cases classified roof coverings may cost more than non-classified roof coverings.	Improves safety.
S3-21	<p>Revise as follows: [BF] 1505.2 Class A roof assemblies. Class A <i>roof assemblies</i> are those that are effective against severe fire test exposure. Class A</p>		X			Adds design option.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p><i>roof assemblies and roof coverings shall be listed and identified as Class A by an approved testing agency. Class A roof assemblies shall be permitted for use in buildings or structures of all types of construction.</i></p> <p>Exceptions:</p> <ol style="list-style-type: none"> Class A <i>roof assemblies</i> include those with coverings of brick, masonry or an exposed concrete roof deck. Class A <i>roof assemblies</i> also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile or slate installed on noncombustible decks or ferrous, copper or metal sheets installed without a roof deck on noncombustible framing. Class A <i>roof assemblies</i> include minimum 16 ounce per square foot (0.0416 kg/m²) copper sheets installed over combustible decks. Class A <i>roof assemblies</i> include slate installed over ASTM D226, Type II or ASTM D4869, Type IV <i>underlayment</i> over combustible decks. 					
S5-22	<p>Revise as follows: 1503.4 Attic and rafter ventilation. <u>Intake and exhaust fans for Ventilation of <i>attic</i> and enclosed rafter assemblies</u> Intake and exhaust vents shall be provided in accordance with Section 1202.2 and the vent product manufacturer’s installation instructions. Exception: Unvented attic and unvented enclosed rafter assemblies shall be permitted in accordance with Section 1202.3.</p>		X			Clarification.
S6-21	<p>Revise as follows: [BG] 1511.1.1 Area limitation. The aggregate area of <i>penthouses</i> and other enclosed <i>rooftop structures</i> shall not exceed one-third the area of the supporting roof deck. Such <i>penthouses</i> and other enclosed <i>rooftop structures</i> shall not be required to be included in determining the <i>building area</i> or number of stories <i>building height</i>, number of stories or <i>building area</i> as regulated by Section 503.1. The area of such <i>penthouses</i> shall not be included in determining the <i>fire area</i> specified in Section 901.7.</p>		X			Clarification.
S6-22	<p>Revise as follows: 1504.1 Wind resistance of roofs. <i>Roof decks and roof coverings</i> shall be designed in for wind loads in accordance with Chapter 16 and this Sections 1504.2, 1504.3 , 1504.4 and 1504.5.</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
S7-21	<p>Revise as follows: [BG] 1511.2.4 Type of construction. Penthouses shall be constructed of building elements <i>building element</i> materials as required for the type of construction of the building on which such penthouses are built. <u>Penthouse exterior walls and roof construction shall have a fire-resistance rating as required for the type of construction of the building. Supporting construction of such exterior walls and roof construction shall have a fire-resistance rating not less than required for the exterior wall or roof supported.</u> Exceptions: 1.</p>	X			Reduces the required fire-resistance rating requirements for penthouses	Decreased fire resistance rating requirement for penthouses.
S7-22	<p>1504.4.4 Slate shingles. <u>Slate shingles shall be tested in accordance with ASTM D3161. Slate packaging shall bear a label indicating compliance with ASTM D3161 and the required classification in Table 1504.2.</u></p>		X			Increased safety.
S8-22	<p>Add new definition as follows: LOW-SLOPE. A roof slope less than two units vertical in 12 units horizontal (17-percent slope) or less. Revise as follows: [BF] STEEP-SLOPE. A roof slope greater than 2 units vertical in 12 units horizontal (17-percent slope) or greater. 1504.5 Ballasted low-slope single-ply roof systems. Ballasted low-slope (roof slope < 2:12) single-ply roof system coverings installed in accordance with Section 1507.12 shall be designed in accordance with ANSI/SPRI RP-4. 1504.6 Edge systems for low-slope roofs. Metal edge systems, except gutters and counterflashing, installed on built-up, modified bitumen and single-ply roof systems having a slope less than 2 units vertical in 12 units horizontal (2:12) on a low slope roof shall be designed and installed for wind loads in accordance with Chapter 16 and tested for resistance in accordance with Test Methods RE-1, RE-2 and RE-3 of ANSI/SPRI ES-1, except basic design wind speed, V, shall be determined from Figures 1609.3(1) through 1609.3(12) as applicable. 1504.6.1 Gutter securement for low-slope roofs. Gutters that are used to secure the perimeter edge of the roof membrane on low-slope (less than 2:12 slope) built-up, modified bitumen, and single-ply roofs, shall be designed, constructed and installed to resist wind loads in accordance with Section 1609 and shall be</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>tested in accordance with Test Methods G-1 and G-2 of SPRI GT-1.</p> <p>1504.7 Physical properties. <i>Roof coverings</i> installed on low-slope roofs (roof slope < 2:12) in accordance with Section 1507 shall demonstrate physical integrity over the working life of the roof based on 2,000 hours of exposure to accelerated weathering tests conducted in accordance with ASTM G152, ASTM G154 or ASTM G155. Those <i>roof coverings</i> that are subject to cyclical flexural response due to wind <i>loads</i> shall not demonstrate any significant loss of tensile strength for unreinforced membranes or breaking strength for reinforced membranes when tested as herein required.</p> <p>1504.8 Impact resistance. <i>Roof coverings</i> installed on low-slope roofs (roof slope < 2:12) in accordance with Section 1507 shall resist impact damage based on the results of tests conducted in accordance with ASTM D3746, ASTM D4272 or the “Resistance to Foot Traffic Test” in FM 4470.</p> <p>1507.12.3 Ballasted low-slope roofs. Ballasted low-slope roofs (roof slope < 2:12) shall be installed in accordance with this section and Section 1504.5. Stone used as <i>ballast</i> shall comply with ASTM D448 or ASTM D7655.</p>					
S9-22	<p>Revise as follows:</p> <p>[BS] BASIC WIND SPEED, V. Basic design wind speeds. <u>The wind speed used for design, as determined in Chapter 16.</u></p> <p>[BS] HURRICANE-PRONE REGIONS. Areas vulnerable to hurricanes defined as:</p> <ol style="list-style-type: none"> 1. The US Atlantic Ocean and Gulf of Mexico coasts where the basic design wind speed, V, for Risk Category II buildings is greater than 115 mph (51.4 m/s); 2. Hawaii, Puerto Rico, Guam, Virgin Islands and American Samoa. <p>[BS] WINDBORNE DEBRIS REGION. Areas within hurricane-prone regions located:</p> <ol style="list-style-type: none"> 1. Within 1 mile (1.61 km) of the mean high-water line where an Exposure D condition exists upwind at the waterline and the basic design wind speed, V, is 130 mph (58 m/s) or greater; or 2. In areas where the basic design wind speed, V, is 140 mph (63 m/s) or greater. <p>For Risk Category II buildings and structures and Risk Category III buildings and structures, except health care facilities, the</p>		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>windborne debris region shall be based on Figure 1609.3.(1). For Risk Category IV buildings and structures and Risk Category III health care facilities, the windborne debris region shall be based on Figure 1609.3(2).</p> <p>[BS] 1404.16 Fiber-cement siding. <i>Fiber-cement siding</i> complying with Section 1403.10 shall be permitted on <i>exterior walls</i> of Type I, II, III, IV and V construction for wind pressure resistance or <u>basic</u> wind speed exposures as indicated by the manufacturer’s listing and <i>label</i> and <i>approved</i> installation instructions. Where specified, the siding shall be installed over sheathing or materials listed in Section 2304.6 and shall be installed to conform to the <i>water-resistive barrier</i> requirements in Section 1402. Siding and accessories shall be installed in accordance with <i>approved</i> manufacturer’s instructions. Unless otherwise specified in the <i>approved</i> manufacturer’s instructions, nails used to fasten the siding to wood studs shall be corrosion-resistant round head smooth shank and shall be long enough to penetrate the studs not less than 1 inch (25 mm). For cold-formed steel <i>light-frame construction</i>, corrosion-resistant fasteners shall be used. Screw fasteners shall penetrate the cold-formed steel framing not fewer than three exposed full threads. Other fasteners shall be installed in accordance with the approved construction documents and manufacturer’s instructions.</p> <p>[BS] 1404.18 Polypropylene siding. <i>Polypropylene siding</i> conforming to the requirements of this section and complying with Section 1403.12 shall be limited to <i>exterior walls</i> located in areas where the <u>basic</u> wind speed, <u>V</u>, specified in Chapter 16 does not exceed 100 miles per hour (45 m/s) and the building height is less than or equal to 40 feet (12 192 mm) in Exposure C. Where construction is located in areas where the basic wind speed, <u>V</u>, exceeds 100 miles per hour (45 m/s), or building heights are in excess of 40 feet (12 192 mm), tests or calculations indicating compliance with Chapter 16 shall be submitted. <i>Polypropylene siding</i> shall be installed in accordance with the manufacturer’s instructions. <i>Polypropylene siding</i> shall be secured to the building so as to provide weather protection for the <i>exterior walls of the building</i>.</p> <p>1504.6 Edge systems for low-slope roofs. <i>Metal edge systems, except gutters and counterflashing, installed on built-up, modified bitumen and single-ply roof systems having a slope less than 2</i></p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p><i>units vertical in 12 units horizontal (2:12) shall be designed and installed for wind loads in accordance with Chapter 16 and tested for resistance in accordance with Test Methods RE-1, RE-2 and RE-3 of ANSI/SPRI ES-1, except basic design wind speed, V, shall be determined from Figures 1609.3(1) through 1609.3(12) as applicable.</i></p> <p>1504.9 Wind resistance of aggregate-surfaced roofs. Parapets shall be provided for aggregate surfaced roofs and shall comply with Table 1504.9.</p> <p>TABLE 1504.9 MINIMUM REQUIRED PARAPET HEIGHT (INCHES) FOR AGGREGATE SURFACED ROOFS^{a, b, c}</p> <p>Portions of table not shown remain unchanged.</p> <p>b. Basic design wind speed, V, and wind exposure shall be determined in accordance with Section 1609.</p> <p>1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <p>1. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970 and installed in accordance with the manufacturer’s installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment for the applicable roof covering for design <u>basic</u> wind speeds, <u>V</u>, less than 120 mph (54 m/s) shall be applied over the 4-inch-wide (102 mm) membrane strips.</p> <p>2.</p> <p>1507.16.8 Wind resistance. <i>Photovoltaic shingles</i> shall comply with the classification requirements of Table 1504.2 for the appropriate maximum nominal design <u>basic</u> wind speed, V.</p> <p>1602.1 Notations. The following notations are used in this chapter:</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Portions not shown remain unchanged.</p> <p><small>V_{asd} = Allowable stress design wind speed, miles per hour (mph)(km/hr) (m/s) where applicable. V = Basic design wind speed, V, miles per hour (mph)(km/hr) (m/s) determined from Figures 1609.3(1) through 1609.3(12) or ASCE 7</small></p> <p>1603.1 General. <i>Construction documents</i> shall show the size, section and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.9 shall be indicated on the <i>construction documents</i>.</p> <p>Exception: <i>Construction documents</i> for buildings constructed in accordance with the <i>conventional light-frame construction</i> provisions of Section 2308 shall indicate the following structural design information:</p> <ol style="list-style-type: none"> 1. 3. Basic design wind speed, V, miles per hour (mph)(km/hr)(m/s) and allowable stress design wind speed, V_{asd}, as determined in accordance with Section 1609.3.1 and wind exposure. 4. <p>1603.1.4 Wind design data. The following information related to wind <i>loads</i> shall be shown, regardless of whether wind <i>loads</i> govern the design of the lateral force-resisting system of the structure:</p> <ol style="list-style-type: none"> b. Basic design wind speed, V, miles per hour and allowable stress design wind speed, V_{asd}, as determined in accordance with Section 1609.3.1. c. <i>Risk category</i>. d. Wind exposure. Applicable wind direction if more than one wind exposure is utilized. e. Applicable internal pressure coefficient. f. Design wind pressures and their applicable zones with dimensions to be used for exterior component and cladding materials not specifically designed by the <i>registered design professional</i> responsible for the design of the structure, pounds per square foot (kN/m²). <p>TABLE 1604.3 DEFLECTION LIMITS^{a, b, c, h, i}</p> <p>Portions of table not shown remain unchanged.</p> <ol style="list-style-type: none"> f. The wind load shall be permitted to be taken as 0.42 times the “component and cladding” loads or directly calculated using the 10- year mean return interval basic wind speed, V, for the purpose of determining deflection limits in Table 1604.3. Where 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>framing members support glass, the deflection limit therein shall not exceed that specified in Section 1604.3.7.</p> <p>1609.1.1 Determination of wind loads. Wind loads on every building or structure shall be determined in accordance with Chapters 26 to 30 of ASCE 7. The type of opening protection required, the basic design wind speed, V, and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.</p> <p>Exceptions:</p> <p>1.</p> <p>The wind speeds in Figures 1609.3(1) through 1609.3(12) are basic design wind speeds, V, and shall be converted in accordance with Section 1609.3.1 to allowable stress design wind speeds, V_{asd}, when the provisions of the standards referenced in Exceptions 4 and 5 are used.</p> <p>TABLE 1609.2 WINDBORNE DEBRIS PROTECTION FASTENING SCHEDULE FOR WOOD STRUCTURAL PANELS^{a, b, c, d}</p> <p>Portions of Table not shown remain unchanged.</p> <p>a. This table is based on a 140 mph <u>basic</u> wind speeds, V, and a 45-foot mean roof height.</p> <p>1609.2.2 Application of ASTM E1996. The text of Section 6.2.2 of ASTM E1996 shall be substituted as follows:</p> <p>6.2.2 Unless otherwise specified, select the wind zone based on the basic design wind speed, V, as follows:</p> <p>6.2.2.1 Wind Zone 1—130 mph ≤ basic design wind speed, V < 140 mph.</p> <p>6.2.2.2 Wind Zone 2—140 mph ≤ basic design wind speed, V < 150 mph at greater than one mile (1.6 km) from the coastline. The coastline shall be measured from the mean high water mark.</p> <p>6.2.2.3 Wind Zone 3—150 mph (67 m/s) ≤ basic design wind speed, V ≤ 160 mph (72 m/s), or 140 mph (63 m/s) ≤ basic design wind speed, V ≤ 160 mph (72 m/s) and within one mile (1.6 km) of the coastline. The coastline shall be measured from the mean high water mark.</p> <p>6.2.2.4 Wind Zone 4— basic design wind speed, V > 160 mph (72 m/s).</p> <p>1609.3 Basic design wind speed. The basic design wind speed, V, in mph, for the determination of the wind loads shall be</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>determined by Figures 1609.3(1) through 1609.3(12). The basic design wind speed, V, for use in the design of Risk Category II buildings and structures shall be obtained from Figures 1609.3(1), 1609.3(5) and 1609.3(6). The basic design wind speed, V, for use in the design of Risk Category III buildings and structures shall be obtained from Figures 1609.3(2), 1609.3(7) and 1609.3(8). The basic design wind speed, V, for use in the design of Risk Category IV buildings and structures shall be obtained from Figures 1609.3(3), 1609.3(9) and 1609.3(10). The basic design wind speed, V, for use in the design of Risk Category I buildings and structures shall be obtained from Figures 1609.3(4), 1609.3(11) and 1609.3(12). The basic design wind speed, V, for the special wind regions indicated near mountainous terrain and near gorges shall be in accordance with local jurisdiction requirements. The basic design wind speeds, V, determined by the local jurisdiction shall be in accordance with Chapter 26 of ASCE 7.</p> <p>In nonhurricane-prone regions, when the basic design wind speed, V, is estimated from regional climatic data, the basic design wind speed, V, shall be determined in accordance with Chapter 26 of ASCE 7.</p> <p>1609.3.1 Wind speed conversion. Where required, the basic design wind speed, V, of Figures 1609.3(1) through 1609.3(12) shall be converted to <i>allowable stress design</i> wind speeds, V_{asd}, using Table 1609.3.1 or Equation 16-17.</p> $V_{asd} = V\sqrt{0.6} \quad \text{(Equation 16-17)}$ <p>V_{asd} = Allowable stress design wind speed applicable to methods specified in Exceptions 4 and 5 of Section 1609.1.1.</p> <p>V = Basic design wind speeds determined from Figures 1609.3(1) through 1609.3(12).</p> <p>1705.12 Special inspections for wind resistance. <i>Special inspections</i> for wind resistance specified in Sections 1705.12.1 through 1705.12.3, unless exempted by the exceptions to Section 1704.2, are required for buildings and structures constructed in the following areas:</p> <ol style="list-style-type: none"> 1. In wind Exposure Category B, where <i>basic wind speed</i>, V is 150 miles per hour (67 m/sec) or greater. 2. In wind Exposure Category C or D, where <i>basic wind speed</i>, V is 140 mph (62.6 m/sec) or greater. <p>2304.6.1 Wood structural panel sheathing. Where <i>wood structural panel</i> sheathing is used as the exposed finish on the</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>outside of <i>exterior walls</i>, it shall have an exterior exposure durability classification. Where <i>wood structural panel</i> sheathing is used elsewhere, but not as the exposed finish, it shall be of a type manufactured with exterior glue (Exposure 1 or Exterior). <i>Wood structural panel</i> sheathing, connections and framing spacing shall be in accordance with Table 2304.6.1 for the applicable <u>allowable stress design</u> wind speed and exposure category where used in enclosed buildings with a mean roof height not greater than 30 feet (9144 mm) and a topographic factor (K_{zt}) of 1.0.</p> <p>TABLE 2304.10.2 FASTENING SCHEDULE Portions of table not shown remain unchanged.</p> <p>e. Tabulated fastener requirements apply where the ultimate design <u>basic</u> wind speed, V, is less than 140 mph. For wood structural panel roof sheathing attached to gable-end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 4 inches on center where the ultimate design <u>basic</u> wind speed, V, is greater than 130 mph in Exposure B or greater than 110 mph in Exposure C. Spacing exceeding 6 inches on center at intermediate supports shall be permitted where the fastening is designed per the AWC NDS.</p> <p>f. Fastening is only permitted where the ultimate design <u>basic</u> wind speed, V, is less than or equal to 110 mph.</p> <p>2404.1 Vertical glass. Glass sloped 15 degrees (0.26 rad) or less from vertical in windows, curtain and window walls, doors and other exterior applications shall be designed to resist the wind loads due to basic design wind speed, V, in Section 1609 for components and cladding. Glass in glazed curtain walls, glazed storefronts and glazed partitions shall meet the seismic requirements of ASCE 7, Section 13.5.9. The load resistance of glass under uniform load shall be determined in accordance with ASTM E1300. The design of vertical glazing shall be based on Equation 24-1.</p> $0.6F_{gw} \leq F_{ga} \quad \text{(Equation 24-1)}$ <p>where: F_{gw} = Wind load on the glass due to basic design wind speed, V, computed in accordance with Section 1609. F_{ga} = Short duration load on the glass as determined in accordance with ASTM E1300.</p>					

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>2404.2 Sloped glass. Glass sloped more than 15 degrees (0.26 rad) from vertical in skylights, <i>sunrooms</i>, sloped roofs and other exterior applications shall be designed to resist the most critical combinations of loads determined by Equations 24-2, 24-3 and 24-4.</p> $F_g = 0.6W_o - D$ $F_g = 0.6W_i + D + 0.5 S$ $F_g = 0.3 W_i + D + S$ <p>D = Glass dead load psf (kN/m²).</p> <p>For glass sloped 30 degrees (0.52 rad) or less from horizontal, <i>W_i</i> = Inward wind force, psf (kN/m²) due to basic design <i>wind speed</i>, <i>V</i>, as calculated in Section 1609. <i>W_o</i> = Outward wind force, psf (kN/m²) due to basic design <i>wind speed</i>, <i>V</i>, as calculated in Section 1609.</p> <p>2404.3.3 Vertical patterned glass. Patterned glass sloped 15 degrees (0.26 rad) or less from vertical in windows, curtain and window walls, doors and other exterior applications shall be designed to resist the wind <i>loads</i> in Section 1609 for components and cladding according to Equation 24-9.</p> $F_{gw} < 1.0 F_{ge}$ <p>where: <i>F_{gw}</i> = Wind load on the glass due to basic design <i>wind speed</i>, <i>V</i>, computed in accordance with Section 1609. <i>F_{ge}</i> = Nonfactored load in accordance with ASTM E1300. The value for patterned glass shall be based on the thinnest part of the glass. Interpolation between nonfactored load charts in ASTM E1300 shall be permitted.</p> <p>2405.5.2 Skylights rated for separate performance grades for positive and negative design pressure. The design of skylights rated for performance grade for both positive and negative design pressures shall be based on Equations 24-14 and 24-15.</p> $F_{gl} \leq PG_{Pos}$ $F_{gl} \leq PG_{Pos}$ <p>where: <i>PG_{Pos}</i> = Performance grade rating of the skylight under positive design pressure; <i>PG_{Neg}</i> = Performance grade rating of the skylight under negative design pressure; and <i>F_{gi}</i> and <i>F_{go}</i> are determined in accordance with the following: For where:</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Wo = Outward wind force, psf (kN/m2) due to basic design wind speed, V, as calculated in Section 1609.</p> <p>D = The dead weight of the glazing, psf (kN/m2) as determined in Section 2404.2 for glass, or by the weight of the plastic, psf (kN/m2) for plastic glazing.</p> <p>F_{gi} = Maximum load on the skylight determined from Equations 24-3 and 24-4 in Section 2404.2.</p> <p>F_{go} = Maximum load on the skylight determined from Equation 24-2. For $0.6 W_o < D$, where:</p> <p>Wo = The outward wind force, psf (kN/m2) due to basic design wind speed, V, as calculated in Section 1609.</p> <p>D = The dead weight of the glazing, psf (kN/m2) as determined in Section 2404.2 for glass, or by the weight of the plastic for plastic glazing.</p> <p>F_{gi} = Maximum load on the skylight determined from Equations 24-2 through 24-4 in Section 2404.2.</p> <p>$F_{go} = 0$.</p> <p>2304.6.1 Wood structural panel sheathing. Where <i>wood structural panel</i> sheathing is used as the exposed finish on the outside of <i>exterior walls</i>, it shall have an exterior exposure durability classification. Where <i>wood structural panel</i> sheathing is used elsewhere, but not as the exposed finish, it shall be of a type manufactured with exterior glue (Exposure 1 or Exterior). <i>Wood structural panel</i> sheathing, connections and framing spacing shall be in accordance with Table 2304.6.1 for the applicable allowable stress design basic wind speed and exposure category where used in enclosed buildings with a mean roof height not greater than 30 feet (9144 mm) and a topographic factor (K_{zt}) of 1.0.</p>					
S10-21	<p>Add new definition as follows:</p> <p><u>RAISED-DECK SYSTEM.</u> (For application to Chapter 15 only). A system consisting of <u>decking or pavers supported by pedestals installed over a roof assembly to provide a walking surface.</u></p> <p>Add new text as follows:</p> <p><u>1511.9 Raised-deck systems installed over a roof assembly.</u> <u>Raised-deck systems installed above a roof assembly shall comply with Sections 1511.9.1 through 1511.9.5.</u></p>			X	Only for those who chose to install this system.	Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1511.9.1 Installation. <u>The installation of a raised-deck system shall comply with all of the following:</u></p> <ol style="list-style-type: none"> <u>1. The perimeter of the raised-deck system shall be surrounded on all sides by parapet walls or by a noncombustible enclosure approved to prevent fire intrusion below the raised-deck system. The parapet wall or enclosure shall extend above the plane of the top surface of at least from the roof assembly to the top surface of the raised deck system. The enclosure shall not impede roof drainage in accordance with Section 1511.9.5.</u> <u>2. A raised-deck system shall be installed above a listed roof assembly.</u> Exception: <u>Where the roof assembly is not required to have a fire classification in accordance with Section 1505.2.</u> <u>3. A raised-deck system shall be installed in accordance with the manufacturer's installation instructions.</u> <u>4. A raised-deck system shall not obstruct or block impede the operation of plumbing or mechanical vents, exhaust, or air inlets or roof drains. Where required, access for inspection, cleaning or maintenance shall be provided.</u> <p>1511.9.2 Fire classification. <u>The raised-deck system shall be tested, listed and labeled identified with a fire classification in accordance with Section 1505 and shall be tested in accordance with either Section 1511.9.2.1 or Section 1511.9.2.2. The fire classification of the raised deck system shall be not less than the fire classification for the roof covering over which it is installed.</u> Exception: <u>Where the top surface of the raised deck system consists of brick, masonry or concrete materials, a fire classification is not required.</u></p> <p>1511.9.2.1 Fire testing of the raised deck system installed over a classified roof assembly. <u>The raised deck system shall be tested separately from the roof assembly over which it is installed. The fire classification of the raised deck system shall be not less than the fire classification for the roof assembly over which it is installed.</u> Exception: <u>Where the top surface decking or pavers of the raised deck system consists of brick, masonry or concrete materials, fire testing of the raised deck system is not required.</u></p> <p>1511.9.2.2 Fire testing of the raised deck system together with the roof assembly. <u>The roof assembly and the raised deck system shall be tested together.</u></p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1511.9.3 Pedestals or supports. The pedestals or supports for the <u>raised deck system</u> shall be installed in accordance with manufacturer’s installation instructions.</p> <p>1511.9.4 Structural requirements. The <u>raised-deck system</u> shall be designed for wind all applicable loads in accordance with Chapter 16 and Section 1504.5. The raised-deck system shall be designed for seismic loads in accordance with Chapter 16.</p> <p>1511.9.5 Roof drainage. The raised-deck system, including the wall or enclosure between the roof assembly and the raised deck, shall <u>be designed and installed to not impede</u> allow for the operation of the roof drainage system as required by Section 1502 and the International Plumbing Code. <u>The roof structure shall be designed to support any standing water resulting from the installation of the raised-deck system.</u></p> <p>1511.9.6 Access Accessibility and Egress. Access to the theThe raised-deck system shall be <u>accessible</u> in accordance with Chapter 11 and <u>means of egress shall be provided</u> in accordance with Chapter 10.</p>					
S11-22	<p>Delete without substitution:</p> <p>1504.7 Physical properties. Roof coverings installed on low-slope roofs (roof slope < 2:12) in accordance with Section 1507 shall demonstrate physical integrity over the working life of the roof based on 2,000 hours of exposure to accelerated weathering tests conducted in accordance with ASTM G152, ASTM G154 or ASTM G155. Those <i>roof coverings</i> that are subject to cyclical flexural response due to wind loads shall not demonstrate any significant loss of tensile strength for unreinforced membranes or breaking strength for reinforced membranes when tested as herein required.</p>		X			Clarification.
S12-22	<p>Revise as follows:</p> <p>TABLE 1504.9 MINIMUM REQUIRED PARAPET HEIGHT (INCHES) FOR AGGREGATE SURFACED ROOFS^{a, b, c, d}</p> <p>Portions of table not shown remain unchanged.</p> <p>d. <u>The tabulated values apply only to conditions where the topographic factor (K_{zt}) determined in accordance with Chapter 26 of ASCE 7 is 1.0 or where K_{zt} is incorporated in the mapped basic design wind speed in section 1609.</u></p> <p>e. d. For Exposure D, add 8 inches (203 mm) to the parapet height required for Exposure C and the parapet height shall not be less than 12 inches (305 mm).</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S13-22`	<p>Revise as follows: 1504.9 Wind resistance of aggregate-surfaced roofs. Parapets shall be provided for aggregate surfaced roofs and shall comply with Table 1504.9. <u>Such parapets shall be provided on the perimeter of the roof at all exterior sides except where an adjacent wall extends above the roof to a height at least equivalent to that required for the parapet.</u></p>		X			Clarification.
S14-22	<p>Revise as follows: 1504.9 Wind resistance of aggregate-surfaced roofs. Parapets shall be provided for aggregate surfaced roofs and shall comply with Table 1504.9. <u>For roofs with differing surface elevations due to slope or sections at different elevations, the minimum parapet height shall be provided for determined based on each roof surface elevation and at no point shall the parapet height be less than that required by Table 1504.9.</u></p>		X			Clarification.
S15-22	<p>Revise as follows: TABLE 1504.9 MINIMUM REQUIRED PARAPET HEIGHT (INCHES) FOR AGGREGATE SURFACED ROOFS^{a, b, c} Portions of table not shown remain unchanged. a. Interpolation shall be permitted for <u>wind speed</u>, mean roof height and parapet height. <u>Extrapolation is not permitted.</u></p>		X			Clarification.
S16-22	<p>Revise as follows: TABLE 1504.9 MINIMUM REQUIRED PARAPET HEIGHT (INCHES) FOR AGGREGATE SURFACED ROOFS^{a, b, c} Portions of table not shown remain unchanged. a. <u>Parapet height is measured vertically from the top surface of the coping down to the surface of the roof covering in the field of the roof adjacent to the parapet and outbound of any cant strip.</u> b.a. Interpolation shall be permitted for mean roof height and parapet height. c.b. Basic design wind speed, V, and wind exposure shall be determined in accordance with Section 1609. d.c. Where the minimum required parapet height is indicated to be 2 inches (51 mm), a gravel stop shall be permitted and shall extend not less than 2 inches (51 mm) from the roof surface and not less than the height of the aggregate. e.d. For Exposure D, add 8 inches (203 mm) to the parapet height required for Exposure C and the parapet height shall not be less than 12 inches (305 mm).</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S17-22	<p>Revise as follows: 1504.9 Wind resistance of aggregate-surfaced roofs. Parapets shall be provided for aggregate surfaced roofs and shall comply with Table 1504.9. Exception: Aggregate ballasted <u>Ballasted single-ply roof coverings shall be designed and installed accordance with Section 1504.5.</u></p>		X			Clarification.
S18-22	<p>Revise as follows: [BF] 1505.8 Building-integrated photovoltaic (BIPV) products systems. <i>BIPV products systems</i> installed as the roof covering shall be tested, <i>listed</i> and <i>labeled</i> for fire classification in accordance with Section 1505.1. [BS] BUILDING-INTEGRATED PHOTOVOLTAIC (BIPV) PRODUCT SYSTEM. A building product—system that incorporates <i>photovoltaic modules</i> and functions as a <u>an integral part</u> component of the building envelope, <u>such as roof assemblies and roof coverings, exterior wall envelopes and exterior wall coverings, and fenestration.</u></p>		X			Clarification.
S19-22	<p>Revise as follows: 1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3). Exceptions: <u>1. As an alternative, self-adhering polymer modified bitumen underlayment complying with ASTM D1970 and installed in accordance with the manufacturer's installation instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed shall be permitted.</u> 2.1. <u>As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970 and installed in accordance with the manufacturer's installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment for the applicable roof covering for design wind speeds less than 120 mph (54 m/s) shall be applied over the 4-inch-wide (102 mm) membrane strips.</u></p>		X			Editorial correction.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>3.2. As an alternative, two layers of underlayment complying with ASTM D226 Type II or ASTM D4869 Type IV shall be permitted to be installed as follows: Apply a 19-inch (483 mm) strip of underlayment parallel with the eave. Starting at the eave, apply 36-inch-wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25.4 mm). Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a thickness of not less than 0.010 inch (0.254 mm). Thickness of the outside edge of plastic caps shall be not less than 0.035 inch (0.89 mm). The cap nail shank shall be not less than 0.083 inch (2.1 mm) for ring shank cap nails and 0.091 inch (2.3 mm) for smooth shank cap nails. The cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch (19.1 mm) into the roof sheathing.</p> <p>4.3. Structural metal panels that do not require a substrate or underlayment.</p>					
S20-22	<p>Revise as follows:</p> <p>1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <p>1. <u>As an alternative, self-adhering polymer-modified bitumen underlayment bearing a label indicating compliance with ASTM D1970 and installed in accordance with both the underlayment manufacturer's and roof covering manufacturer's instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted.</u></p>			X	Cost of additional underlayment layer is \$100 per 1000 sqft. + additional fasteners costs.	Consistency between I-Codes.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>2.1. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane bearing a label indicating compliance to complying with ASTM D1970 and installed in accordance with the manufacturer’s installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment complying with Table 1507.1.1(1) for the applicable roof covering and design wind speed for design basic wind speeds less than 120 mph (54 m/s) shall be applied over the entire roof over the 4-inch-wide (102 mm) membrane strips. Underlayment shall be applied in accordance with Table 1507.1.1(2) using the application requirements for where the maximum basic design wind speed is less than 130 mph. Underlayment shall be attached in accordance with Table 1507.1.1(3) for the applicable roof covering and basic design wind speed.</p> <p>2. As an alternative, two layers of underlayment complying with ASTM D226 Type II or ASTM D4869 Type IV shall be permitted to be installed as follows: Apply a 19-inch (483 mm) strip of underlayment parallel with the eave. Starting at the eave, apply 36 inch wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25.4 mm). Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a thickness of not less than 0.010 inch (0.254 mm). Thickness of the outside edge of plastic caps shall be not less than 0.035 inch (0.89 mm). The cap nail shank shall be not less than 0.083 inch (2.1 mm) for ring shank cap nails and 0.091 inch (2.3 mm) for smooth shank cap nails. The cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4-inch (19.1 mm) into the roof sheathing.</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

3. Structural metal panels that do not require a substrate or underlayment.

TABLE 1507.1.1(1) UNDERLAYMENT TYPES

ROOF COVERING	SECTION	MAXIMUM BASIC DESIGN WIND SPEED, V < 130-140 MPH IN HURRICANE-PRONE REGIONS OR V < 140 MPH OUTSIDE HURRICANE-PRONE REGIONS	MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 130-140 MPH IN HURRICANE-PRONE REGIONS OR V ≥ 140 MPH OUTSIDE HURRICANE-PRONE REGIONS
Asphalt shingles	1507.2	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757	ASTM D226 Type II ASTM D4869 Type III or IV ASTM D6757
Clay and concrete tiles	1507.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing Manufacturer's instructions	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing
Metal roof panels	1507.4	Manufacturer's instructions	ASTM D226 Type II ASTM D4869 Type III or IV
Metal roof shingles	1507.5	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or IV
Mineral-surfaced roll roofing	1507.6	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or IV
Slate shingles	1507.7	ASTM D226 Type II ASTM D4869 Type III or IV	ASTM D226 Type II ASTM D4869 Type III or IV
Wood shingles	1507.8	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or IV
Wood shakes	1507.9	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or IV
Photovoltaic shingles	1507.16	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757	ASTM D226 Type II ASTM D4869 Type III or IV ASTM D6757

TABLE 1507.1.1(2) UNDERLAYMENT APPLICATION

ROOF COVERING	SECTION	MAXIMUM BASIC DESIGN WIND SPEED, V < 130-140 MPH IN HURRICANE-PRONE REGIONS OR V < 140 MPH OUTSIDE HURRICANE-PRONE REGIONS	MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 130-140 MPH IN HURRICANE-PRONE REGIONS OR V ≥ 140 MPH OUTSIDE HURRICANE-PRONE REGIONS
Asphalt shingles	1507.2	For roof slopes from 2 units vertical in 12 units horizontal (2:12), up to 4 units vertical in 12 units horizontal (4:12), underlayment shall be two layers applied as follows: Apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet. Distortions in the underlayment shall not interfere with the ability of the shingles to seal.	Same-as-Maximum-Basic-Design-Wind-Speed-V < 140-mph, except all laps shall be not less than 4 inches. Underlayment shall be two layers applied as follows: Apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet. Distortions in the underlayment shall not interfere with the ability of the shingles to seal.
Clay and concrete tile	1507.3	For roof slopes from 2 1/2 units vertical in 12 units horizontal (2 1/2:12), up to 4 units vertical in 12 units horizontal (4:12), underlayment shall be not fewer than two layers applied as follows: Starting at the eave, a 19-inch strip of underlayment shall be applied parallel with the eave. Starting at the eave, a 36-inch-wide strip of underlayment felt shall be applied, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet. Distortions in the underlayment shall not interfere with the ability of the shingles to seal.	Same-as-Maximum-Basic-Design-Wind-Speed-V < 140-mph, except all laps shall be not less than 4 inches. Underlayment shall be two layers applied as follows: Apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet. Distortions in the underlayment shall not interfere with the ability of the shingles to seal.
Metal roof panels	1507.4	Apply in accordance with the manufacturer's installation instructions	Apply in accordance with the manufacturer's installation instructions
Metal roof shingles	1507.5	Apply in accordance with the manufacturer's installation instructions	Apply in accordance with the manufacturer's installation instructions
Mineral-surfaced roll roofing	1507.6	Apply in accordance with the manufacturer's installation instructions	Apply in accordance with the manufacturer's installation instructions
Slate shingles	1507.7	Apply in accordance with the manufacturer's installation instructions	Apply in accordance with the manufacturer's installation instructions
Wood shingles	1507.8	Apply in accordance with the manufacturer's installation instructions	Apply in accordance with the manufacturer's installation instructions
Wood shakes	1507.9	Apply in accordance with the manufacturer's installation instructions	Apply in accordance with the manufacturer's installation instructions
Photovoltaic shingles	1507.16	For roof slopes from 3 units vertical in 12 units horizontal (3:12), up to 4 units vertical in 12 units horizontal (4:12), underlayment shall be two layers applied as follows: Apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet. Distortions in the underlayment shall not interfere with the ability of the shingles to seal.	Same-as-Maximum-Basic-Design-Wind-Speed-V < 140-mph, except all laps shall be not less than 4 inches. Underlayment shall be two layers applied as follows: Apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet. Distortions in the underlayment shall not interfere with the ability of the shingles to seal.

For Sl: 1 inch = 25.4 mm, 1 foot = 304.8 mm; 1 mile per hour = 0.447 m/s.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY		IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	Neutral	Increase		
Sub Code:							
TABLE 1507.1.1(3) UNDERLAYMENT ATTACHMENT							
		<p>MAXIMUM BASIC DESIGN WIND SPEED, V < 130 140 MPH IN HURRICANE-PRONE REGIONS OR V < 140 MPH OUTSIDE HURRICANE-PRONE REGIONS</p>	<p>MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 130 140 MPH IN HURRICANE-PRONE REGIONS OR V ≥ 140 MPH OUTSIDE HURRICANE-PRONE REGIONS</p>				
	ROOF COVERING SECTION						
	Asphalt shingles	1507.2	Fastened sufficiently to hold in place	The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches between side laps with a 6-inch spacing at side and end laps. Underlayment shall be attached using <u>annular ring or deformed shank nails with 1 inch diameter metal</u> or plastic caps <u>nails or cap staples with a nominal cap diameter of not less than 1 inch</u> . Metal caps shall have a thickness of not less than 32-gage (0.0134 inch) sheet metal. Power-driven metal caps shall have a minimum thickness of 0.010 inch. <u>Minimum</u> thickness of the outside edge of plastic caps shall be 0.035 inch. The cap nail shank shall be not less than 0.083 inch for <u>ring shank cap nails</u> and 0.091 inch for <u>smooth shank cap nail</u> . <u>Staples shall be not less than 21 gage (0.032 inch)</u> . The cap nail shank and <u>cap staple legs</u> shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch into the roof sheathing.			
	Clay and concrete tile	1507.3					
	Photovoltaic shingles	1507.16					
	Metal roof panels	1507.4	Manufacturer's installation instructions	The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches between side laps with a 6-inch spacing at side and end laps. Underlayment shall be attached using <u>annular ring or deformed shank nails with 1 inch diameter metal</u> or plastic caps <u>nails or cap staples with a nominal cap diameter of not less than 1 inch</u> . Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a minimum thickness of 0.010 inch. <u>Minimum</u> thickness of the outside edge of plastic caps shall be 0.035 inch. The cap nail shank shall be not less than 0.083 inch for <u>ring shank cap nails</u> and 0.091 inch for <u>smooth shank cap nails</u> . <u>Staples shall be not less than 21 gage</u> . The cap nail <u>shank and cap staple legs</u> shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch into the roof sheathing.			
	Metal roof shingles	1507.5					
	Mineral-surfaced roll roofing	1507.6					
	Slate shingles	1507.7					
	Wood shingles	1507.8					
	Wood shakes	1507.9					
S21-22	<p>Revise as follows: [BS] PHOTOVOLTAIC SHINGLES. A roof covering resembling shingles that incorporates photovoltaic modules. Add new definition as follows: BUILDING-INTEGRATED PHOTOVOLTAIC (BIPV) ROOF COVERING. A BIPV system that also functions as a roof covering. Coverings include, but not limited to, shingles, tiles, and roof panels. 1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and photovoltaic shingles <u>BIPV roof coverings</u> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).</p>				X		Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

Exceptions:

1.

TABLE 1507.1.1(1) UNDERLAYMENT TYPES

Portions of table not shown remain unchanged.

Photovoltaic shingles BIPV roof coverings	1507.16	ASTM D226 Type I or II ASTM D4899 Type I, III or IV ASTM D6757	ASTM D228 Type II ASTM D4899 Type IV ASTM D6757
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TABLE 1507.1.1(2) UNDERLAYMENT APPLICATION

Portions of table not shown remain unchanged.

Underlayment	1507.16	For roof slopes from 3 units vertical in 12 units horizontal (3:12), up to 4 units vertical in 12 units horizontal (4:12), underlayment shall be two layers applied as follows: Apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 8 feet. Distortions in the underlayment shall not interfere with the ability of the shingles to seal. For roof slopes of 4 units vertical in 12 units horizontal (4:12) or greater, underlayment shall be one layer applied as follows: Underlayment shall be applied shingle fashion, parallel to and starting from the eave and lapped 2 inches. Distortions in the underlayment shall not interfere with the ability of the shingles to seal. End laps shall be 4 inches and shall be offset by 8 feet.	Same as Maximum Basic Design Wind Speed, V < 140 mph except all laps shall be not less than 4 inches
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TABLE 1507.1.1(3) UNDERLAYMENT ATTACHMENT

Portions of table not shown remain unchanged.

Photovoltaic shingles BIPV roof coverings	1507.16		
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1507.16 Photovoltaic BIPV shingles. The installation of photovoltaic BIPV shingles shall comply with the provisions of this section.

1507.16.1 Deck requirements. Photovoltaic BIPV shingles shall be applied to a solid or closely fitted deck, except where the shingles are specifically designed to be applied over spaced sheathing.

1507.16.2 Deck slope. Photovoltaic BIPV shingles shall be installed on roof slopes of not less than 2 units vertical in 12 units horizontal (2:12).

1507.16.3 Underlayment. Underlayment shall comply with Section 1507.1.1. **1507.16.4 Ice barrier.** Where required, ice barriers shall comply with Section 1507.1.2.

1507.16.5 Fasteners. Fasteners for photovoltaic BIPV shingles shall be galvanized, stainless steel, aluminum or copper roofing nails, minimum 12-gage [0.105 inch (2.67 mm)] shank with a minimum 3/8-inch-diameter (9.5 mm) head, of a length to penetrate through the roofing materials and not less than 3/4 inch (19.1 mm) into the roof sheathing. Where the roof sheathing is less than 3/4 inch (19.1 mm) thick, the nails shall penetrate through the sheathing. Fasteners shall comply with ASTM F1667.

1507.16.6 Material standards. Photovoltaic BIPV shingles shall be listed and labeled in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.

1507.16.7 Attachment. Photovoltaic BIPV shingles shall be attached in accordance with the manufacturer's installation instructions.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY			IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																									
				Decrease	Neutral	Increase																																											
Sub Code:																																																	
	1507.16.8 Wind resistance. Photovoltaic BIPV shingles shall comply with the classification requirements of Table 1504.2 for the appropriate maximum nominal design wind speed.																																																
S22-22 Part I	<p>Revise as follows: TABLE 1507.1.1(1) UNDERLAYMENT TYPES</p> <table border="1"> <thead> <tr> <th>ROOF COVERING</th> <th>SECTION</th> <th>MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH</th> <th>MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH</th> </tr> </thead> <tbody> <tr> <td>Asphalt shingles</td> <td>1507.2</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 ASTM D8257</td> </tr> <tr> <td>Clay and concrete tiles</td> <td>1507.3</td> <td>ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing ASTM D8257</td> <td>ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing ASTM D8257</td> </tr> <tr> <td>Metal roof panels</td> <td>1507.4</td> <td>Manufacturer's instructions ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D8257</td> </tr> <tr> <td>Metal roof shingles</td> <td>1507.5</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D8257</td> </tr> <tr> <td>Mineral-surfaced roll roofing</td> <td>1507.6</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D8257</td> </tr> <tr> <td>Slate shingles</td> <td>1507.7</td> <td>ASTM D226 Type II ASTM D4869 Type III or IV ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D8257</td> </tr> <tr> <td>Wood shingles</td> <td>1507.8</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D8257</td> </tr> <tr> <td>Wood shakes</td> <td>1507.9</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D8257</td> </tr> <tr> <td>Photovoltaic shingles</td> <td>1507.16</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 ASTM D8257</td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 ASTM D8257</td> </tr> </tbody> </table> <p>1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869, and D6757 or ASTM D8257 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <p>1.</p> <p>Add new standard(s) as follows: D8257/D8257M-20 Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing</p>			ROOF COVERING	SECTION	MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH	MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH	Asphalt shingles	1507.2	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 ASTM D8257	Clay and concrete tiles	1507.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing ASTM D8257	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing ASTM D8257	Metal roof panels	1507.4	Manufacturer's instructions ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D8257	Metal roof shingles	1507.5	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D8257	Mineral-surfaced roll roofing	1507.6	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D8257	Slate shingles	1507.7	ASTM D226 Type II ASTM D4869 Type III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D8257	Wood shingles	1507.8	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D8257	Wood shakes	1507.9	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D8257	Photovoltaic shingles	1507.16	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 ASTM D8257	ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 ASTM D8257					X	Adds design option.
ROOF COVERING	SECTION	MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH	MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH																																														
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Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

<p>S22-22 Part II</p>	<p>Revise as follows: TABLE 1507.1.1(1) UNDERLAYMENT TYPES</p> <table border="1"> <thead> <tr> <th>ROOF COVERING</th> <th>SECTION</th> <th>MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH</th> <th>MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH</th> </tr> </thead> <tbody> <tr> <td>Asphalt shingles</td> <td>1507.2</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 <u>ASTM D8257</u></td> </tr> <tr> <td>Clay and concrete tiles</td> <td>1507.3</td> <td>ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing <u>ASTM D8257</u></td> </tr> <tr> <td>Metal roof panels</td> <td>1507.4</td> <td>Manufacturer's instructions <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u></td> </tr> <tr> <td>Metal roof shingles</td> <td>1507.5</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u></td> </tr> <tr> <td>Mineral-surfaced roll roofing</td> <td>1507.6</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u></td> </tr> <tr> <td>Slate shingles</td> <td>1507.7</td> <td>ASTM D226 Type II ASTM D4869 Type III or IV <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u></td> </tr> <tr> <td>Wood shingles</td> <td>1507.8</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u></td> </tr> <tr> <td>Wood shakes</td> <td>1507.9</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u></td> </tr> <tr> <td>Photovoltaic shingles</td> <td>1507.16</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 <u>ASTM D8257</u></td> <td>ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 <u>ASTM D8257</u></td> </tr> </tbody> </table> <p>1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869, and D6757 and ASTM D8257 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <p>1.</p> <p>Add new standard(s) as follows: D8257/D8257M-20 Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing</p>	ROOF COVERING	SECTION	MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH	MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH	Asphalt shingles	1507.2	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 <u>ASTM D8257</u>	Clay and concrete tiles	1507.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing <u>ASTM D8257</u>	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing <u>ASTM D8257</u>	Metal roof panels	1507.4	Manufacturer's instructions <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>	Metal roof shingles	1507.5	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>	Mineral-surfaced roll roofing	1507.6	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>	Slate shingles	1507.7	ASTM D226 Type II ASTM D4869 Type III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>	Wood shingles	1507.8	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>	Wood shakes	1507.9	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>	Photovoltaic shingles	1507.16	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 <u>ASTM D8257</u>	<p align="center">X</p>			<p>Adds design option.</p>
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Asphalt shingles	1507.2	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 <u>ASTM D8257</u>																																										
Clay and concrete tiles	1507.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing <u>ASTM D8257</u>	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing <u>ASTM D8257</u>																																										
Metal roof panels	1507.4	Manufacturer's instructions <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>																																										
Metal roof shingles	1507.5	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>																																										
Mineral-surfaced roll roofing	1507.6	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>																																										
Slate shingles	1507.7	ASTM D226 Type II ASTM D4869 Type III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>																																										
Wood shingles	1507.8	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>																																										
Wood shakes	1507.9	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV <u>ASTM D8257</u>																																										
Photovoltaic shingles	1507.16	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 <u>ASTM D8257</u>	ASTM D226 Type II ASTM D4869 Type IV ASTM D6757 <u>ASTM D8257</u>																																										
<p>S23-22</p>	<p>Revise as follows: 1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. Underlayment</p>	<p align="center">X</p>			<p>Clarification.</p>																																								

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>materials required to comply with ASTM D226, D1970, D4869, and D6757, D2626 Type I or D6380 Class M shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970 and installed in accordance with the manufacturer’s installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment for the applicable roof covering for design wind speeds less than 120 mph (54 m/s) shall be applied over the 4-inch-wide (102 mm) membrane strips. As an alternative, two layers of underlayment complying with ASTM D226 Type II, or ASTM D4869 Type IV or <u>ASTM D6757</u> shall be permitted to be installed as follows: Apply a 19-inch (483 mm) strip of underlayment parallel with the eave. Starting at the eave, apply 36-inch-wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25.4 mm). Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a thickness of not less than 0.010 inch (0.254 mm). Thickness of the outside edge of plastic caps shall be not less than 0.035 inch (0.89 mm). The cap nail shank shall be not less than 0.083 inch (2.1 mm) for ring shank cap nails and 0.091 inch (2.3 mm) for smooth shank cap nails. The cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch (19.1 mm) into the roof sheathing. Structural metal panels that do not require a substrate or underlayment. 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																
		Decrease	Neutral	Increase																		
Sub Code:																						
	<p>TABLE 1507.1.1(1) UNDERLAYMENT TYPES Portions of table not shown remain unchanged</p> <table border="1"> <thead> <tr> <th>ROOF COVERING</th> <th>SECTION</th> <th>MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH</th> <th>MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH</th> </tr> </thead> <tbody> <tr> <td>Clay and concrete tiles</td> <td>1507.3</td> <td>ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing</td> <td>ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing</td> </tr> <tr> <td>Metal roof panels applied to a solid or closely fitted deck</td> <td>1507.4</td> <td>instructions ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV</td> <td>ASTM D226 Type II ASTM D4869 Type IV</td> </tr> <tr> <td>Wood shakes applied to a solid sheathing roof deck</td> <td>1507.9</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV</td> <td>ASTM D226 Type II ASTM D4869 Type IV</td> </tr> </tbody> </table>	ROOF COVERING	SECTION	MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH	MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH	Clay and concrete tiles	1507.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing	Metal roof panels applied to a solid or closely fitted deck	1507.4	instructions ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type IV	Wood shakes applied to a solid sheathing roof deck	1507.9	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type IV					
ROOF COVERING	SECTION	MAXIMUM BASIC DESIGN WIND SPEED, V < 140 MPH	MAXIMUM BASIC DESIGN WIND SPEED, V ≥ 140 MPH																			
Clay and concrete tiles	1507.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral surfaced roll roofing																			
Metal roof panels applied to a solid or closely fitted deck	1507.4	instructions ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type IV																			
Wood shakes applied to a solid sheathing roof deck	1507.9	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type IV																			
S24-22 Part I	<p>Revise as follows: 1507.1.1 Underlayment. Underlayment <u>in accordance with this section is required</u> for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> <u>and</u> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869, and D6757, <u>and D8257</u> shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached <u>fastened</u> in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970 and installed in accordance with the manufacturer's installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment for the applicable roof covering for design wind speeds less than 120 mph (54 m/s) shall be applied over the 4-inch-wide (102 mm) membrane strips. As an alternative, two layers of underlayment complying with ASTM D226 Type II or ASTM D4869 Type IV shall be permitted to be installed as follows: Apply a 19-inch (483 mm) strip of underlayment parallel with the eave. Starting at the eave apply 36-inch-wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). The underlayment shall be attached with corrosion resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25.4 mm). Metal caps shall 		X			Clarification.																

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>Add new standard(s) as follows: <u>D8257/D8257M-20 Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing</u></p>					
S24-22 Part II	<p>Revise as follows: 1507.1.1 Underlayment. Underlayment <u>in accordance with this section is required</u> for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> <u>and</u> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869, and D6757, <u>and D8257</u> shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached <u>fastened</u> in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <p>1. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970 and installed in accordance with the manufacturer’s installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment for the applicable roof covering for design wind speeds less than 120 mph (54 m/s) shall be applied over the 4-inch-wide (102 mm) membrane strips.</p> <p>2. As an alternative, two layers of underlayment complying with ASTM D226 Type II or ASTM D4869 Type IV shall be permitted to be installed as follows: Apply a 19-inch (483 mm) strip of underlayment parallel with the eave. Starting at the eave apply 36-inch-wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). The underlayment shall be attached with corrosion resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25.4 mm). Metal caps shall</p> <p>3. Structural metal panels that do not require a substrate or underlayment.</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	Add new standard(s) as follows: <u>D8257/D8257M-20 Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing</u>					
S26-22	Revise as follows: 1507.2.8 Flashings. Flashing for asphalt shingles shall comply with this section. Flashing shall be applied in accordance with this section and the asphalt shingle manufacturer’s printed instructions.		X			Expands options for delivering manufacturer’s instructions.
S27-22	Revise as follows: 1507.2.8.2 Valleys. Valley linings shall be installed in accordance with the manufacturer’s instructions before applying shingles. Valley linings of the following types shall be permitted: 1. For open valleys (valley lining exposed) lined with metal, the valley lining shall be not less than 24 inches (610 mm) wide and of any of the corrosion-resistant metals in Table 1507.2.8.2. 2. For open valleys, valley lining of two plies of mineral-surfaced roll roofing complying with ASTM D3909 or ASTM D6380 shall be permitted. The bottom layer shall be 18 inches (457 mm) and the top layer not less than 36 inches (914 mm) wide. 3. For closed valleys (valleys covered with shingles), valley lining of one ply of smooth roll roofing complying with ASTM D6380, and not less than 36 inches (914 mm) wide or types as described in Item 1 or 2 above shall be permitted. Self-adhering polymer modified bitumen <i>underlayment</i> bearing a label indicating compliance with ASTM D1970 <u>and not less than 36 inches (914 mm) wide</u> shall be permitted in lieu of the lining material.		X			Clarification
S28-22	Revise as follows: 1507.4.3 Material standards. Metal-sheet <i>roof covering</i> systems that incorporate supporting structural members shall be designed in accordance with Chapter 22. Metal-sheet <i>roof coverings</i> installed over structural decking shall comply with Table 1507.4.3(1). The materials used for metal-sheet <i>roof coverings</i> shall be naturally corrosion resistant or provided with <i>corrosion resistance</i> in accordance with the standards and minimum thicknesses shown in Table 1507.4.3(2). TABLE 1507.4.3(1) METAL ROOF COVERINGS		X			Clarification

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

ROOF COVERING TYPE	STANDARD APPLICATION RATE/THICKNESS
5% Aluminum alloy-coated steel	ASTM A875, GF60
Aluminum	ASTM B209, 0.024 inch minimum thickness for roll-formed panels and 0.019 inch minimum thickness for press-formed shingles.
Aluminum-coated steel	ASTM A483, T2 65
Aluminum-zinc alloy coated steel	ASTM A792 AZ 50
Cold-rolled copper	ASTM B370 minimum 16 oz./sq. ft. and 12 oz./sq. ft. high yield copper for metal-sheet roof covering systems; 12 oz./sq. ft. for preformed metal shingle systems.
Copper	16 oz./sq. ft. for metal-sheet roof-covering systems; 12 oz./sq. ft. for preformed metal shingle systems.
Galvanized steel	ASTM A653 G-90 zinc-coated ^a
Hard lead	2 lbs./sq. ft.
Lead-coated copper	ASTM B101
Prepainted steel	ASTM A755
Soft lead	3 lbs./sq. ft.
Stainless steel	ASTM A240, 300 Series Alloys
Steel	ASTM A924
Terne and terne-coated stainless	Terne coating of 40 lbs. per double base box; field painted where applicable in accordance with manufacturer's installation instructions.
Zinc	0.027 inch minimum thickness; 99.995% electrolytic high grade zinc with alloy additives of copper (0.08% - 0.20%), titanium (0.07% - 0.12%) and aluminum (0.015%).

For SI: 1 ounce per square foot = 0.305 kg/m², 1 pound per square foot = 4.882 kg/m², 1 inch = 25.4 mm, 1 pound = 0.454 kg.

a. For Group U buildings, the minimum coating thickness for ASTM A653 galvanized steel roofing shall be G-60.

~~Delete TABLE 1507.4.3(2) MINIMUM CORROSION RESISTANCE~~
1507.5.5 Material standards. ~~Metal roof shingle roof coverings shall comply with Table 1507.4.3(1). The materials used for metal-roof-shingle roof coverings shall be naturally corrosion resistant or provided with corrosion resistance in accordance with the standards and minimum thicknesses specified in the standards listed in Table 1507.4.3(2).~~

S30-22	<p>Revise as follows:</p> <p>1507.8.1 Deck requirements. Wood shingles shall be installed on solid or spaced sheathing. Where spaced sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. <u>Where 1-inch by 4-inch (25 mm by 102 mm) spaced sheathing is installed at 10 inches (254 mm) on center or greater, additional 1-inch by 4-inch (25 mm by 102 mm) boards shall be installed between the sheathing boards.</u> When wood shingles are installed over spaced sheathing and the underside of the shingles are exposed to the attic space, the attic shall be ventilated in accordance with Section 1202.2. The shingles shall not be backed with materials that will occupy the required air gap space and prevent the free movement of air on the interior side of the spaced sheathing.</p>		X			Clarification.
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Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S32-22	<p>Revise as follows: 1507.9.1 Deck requirements. Wood shakes shall only be used on solid or spaced sheathing. Where spaced sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. Where 1-inch by 4-inch (25 mm by 102 mm) spaced sheathing is installed at 10 inches (254 mm) on center, additional 1-inch by 4-inch (25 mm by 102 mm) boards shall be installed between the sheathing boards.</p> <p><u>Where wood shakes are installed over spaced sheathing and the underside of the shakes are exposed to the attic space, the attic shall be ventilated in accordance with Section 1202.2. The shakes shall not be backed with materials that will occupy the required air gap space and prevent the free movement of air on the interior side of the spaced sheathing.</u></p>		X			Clarification.
S34-22	<p>Add new text as follows: 1507.14.3 Application. <u>Liquid-applied roofing shall be installed in accordance with this chapter and the manufacturer's installation instructions.</u></p> <p>1507.14.4 Flashings. Flashings shall be applied in accordance section 1507.14 and the liquid applied roofing manufacturer's installation instructions.</p>		X			Editorial.
S35-22 Part I	<p>Revise as follows: 1507.16.6 Material standards. <i>Photovoltaic shingles</i> shall be listed and labeled in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.</p> <p>1507.17.5 Material standards. BIPV roof panels shall be listed and labeled in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.</p>		X			Editorial.
S35-22 Part II	<p>Revise as follows: 1507.16.6 Material standards. <i>Photovoltaic shingles</i> shall be listed and labeled in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.</p> <p>1507.17.5 Material standards. BIPV roof panels shall be listed and labeled in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.</p>		X			Editorial.
S36-22	<p>Add new text as follows: 1507.16.9 Flashing. <u>Flashing for photovoltaic shingles BIPV shingles shall be installed in accordance with the roof covering</u></p>		X			Clarification.

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		Decrease	Neutral	Increase																								
Sub Code:																												
	<p><u>manufacturer's installation instructions to prevent water from entering the wall and roof through joints in copings, through moisture-permeable materials and at intersections with <i>parapet walls</i> and other penetrations through the roof plane.</u></p> <p>1507.17.97 Flashing. <u>Flashing for BIPV roof panels shall be installed in accordance with the <i>roof covering</i> manufacturer's installation instructions to prevent water from entering the wall and roof through joints in copings, through moisture-permeable materials and at intersections with <i>parapet walls</i> and other penetrations through the roof plane.</u></p>																											
S37-22	<p>Revise as follows: TABLE 1508.2 MATERIAL STANDARDS FOR ROOF INSULATION</p> <table border="1"> <tr><td>Cellular glass board</td><td>ASTM C552 <u>or</u> ASTM C1902</td></tr> <tr><td>Composite boards</td><td>ASTM C1289, Type III, IV, V or VII</td></tr> <tr><td>Expanded polystyrene</td><td>ASTM C578</td></tr> <tr><td>Extruded polystyrene</td><td>ASTM C578</td></tr> <tr><td>Fiber-reinforced gypsum board</td><td>ASTM C1278</td></tr> <tr><td>Glass-faced gypsum board</td><td>ASTM C1177</td></tr> <tr><td>High-density polyisocyanurate board</td><td>ASTM C1289, Type II, Class 4</td></tr> <tr><td>Mineral fiber insulation board</td><td>ASTM C726</td></tr> <tr><td>Perlite board</td><td>ASTM C728</td></tr> <tr><td>Polyisocyanurate board</td><td>ASTM C1289, Type I or II</td></tr> <tr><td>Wood fiberboard</td><td>ASTM C208, Type II</td></tr> </table> <p>Add new standard(s) as follows: <u>C1902-20 Standard Specification for Cellular Glass Insulation Used in Building and Roof Applications</u></p>	Cellular glass board	ASTM C552 <u>or</u> ASTM C1902	Composite boards	ASTM C1289, Type III, IV, V or VII	Expanded polystyrene	ASTM C578	Extruded polystyrene	ASTM C578	Fiber-reinforced gypsum board	ASTM C1278	Glass-faced gypsum board	ASTM C1177	High-density polyisocyanurate board	ASTM C1289, Type II, Class 4	Mineral fiber insulation board	ASTM C726	Perlite board	ASTM C728	Polyisocyanurate board	ASTM C1289, Type I or II	Wood fiberboard	ASTM C208, Type II			X	Cost savings if this material as to be used.	Improved thermal resistance for cellulose glass board and lower cost.
Cellular glass board	ASTM C552 <u>or</u> ASTM C1902																											
Composite boards	ASTM C1289, Type III, IV, V or VII																											
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Polyisocyanurate board	ASTM C1289, Type I or II																											
Wood fiberboard	ASTM C208, Type II																											
S43-22	<p>Revise as follows: [BG] 1511.7 Other rooftop structures. <i>Rooftop structures</i> not regulated by Sections 1511.2 through 1511.6 shall comply with Sections 1511.7.1 through 1511.7.56, as applicable.</p> <p>Add new text as follows: 1511.7.6 Lightning Protection Systems. <u>Lightning protection system components shall be installed in accordance with Section 1511.7.6.1, 1511.7.6.2 and 2703 of this code. Lightning protection systems shall not be attached directly to metal edge systems, including gutters, where these roof assembly components are required to be tested to ANSI/SPRI/FM 4435-ES-1 or ANSI/SPRI GT 1 in accordance with Sections 1504.6 or 1504.6.1.</u></p> <p>Exception: <u>Where permitted by the manufacturer's installation instructions for the metal edge systems or gutters.</u></p>			X		Clarification.																						

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p><u>1511.7.6.1 Installation on metal edge systems or gutters.</u> Lightning protection system components directly attached to ANSI/SPRI/FM 4435/ES-1 or ANSI/SPRI GT-1 tested metal edge systems or gutters shall be installed with compatible brackets, fasteners, or adhesives, in accordance with the metal edge systems or gutter manufacturer's installation instructions. When metal edge system or gutter manufacturer is unknown, installation shall be as directed by a registered design professional. or through the roof covering shall be installed in accordance with this chapter and the roof covering manufacturer's installation instructions. Flashing shall be installed in accordance with the roof assembly manufacturer's installation instructions and Sections 1503.2 and 1507 where the lightning protection system installation results in a penetration through the roof plane.</p> <p><u>1511.7.6.2 Installation on roof coverings.</u> Lightning protection system components directly attached to or through the roof covering shall be installed in accordance with this chapter and the roof covering manufacturer's installation instructions. Flashing shall be installed in accordance with the roof assembly manufacturer's installation instructions and Sections 1503.2 and 1507 where the lightning protection system installation results in a penetration through the roof covering. When the roof covering manufacturer is unknown, installation shall be as directed by a registered design professional.</p>					
S44-22	<p>Revise as follows:</p> <p>1512.1 General. Materials and methods of application used for recovering or replacing an existing <i>roof covering</i> shall comply with the requirements of Chapter 15.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Roof replacement or roof recover</i> of existing low-slope <i>roof coverings</i> shall not be required to meet the minimum design slope requirement of 1/4 unit vertical in 12 units horizontal (2-percent slope) in Section 1507 for roofs that provide <u>positive roof drainage</u> and meet the requirements of Section 1608.3 and Section 1611.2. Recovering or replacing an existing <i>roof covering</i> shall not be required to meet the requirement for secondary (emergency overflow) drains or <i>scuppers</i> in Section 1502.2 for roofs that provide for <i>positive roof drainage</i>. For the 			X	Increased costs in some cases due to evaluating and/or modifying a structure that has been found to be unsafe from additional loading	Increased safety.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	purposes of this exception, existing secondary drainage or scupper systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1502.2.				caused by re-roofing.	
S45-22	<p>Revise as follows:</p> <p>1512.1 General. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15.</p> <p>Exceptions:</p> <p>1. Roof replacement or roof recover of existing low-slope roof coverings shall not be required to meet the minimum design slope requirement of 1/4 unit vertical in 12 units horizontal (2-percent slope) in Section 1507 for roofs that provide positive roof drainage and meet the requirements of Section 1608.3 and Section 1611.2.</p> <p>2. Recovering or replacing an existing roof covering shall not be required to meet the requirement for secondary (emergency overflow) drains or scuppers in Section 1502.2 for roofs that provide for positive roof drainage <u>and have been determined to resist all design loads</u> meet the requirements of Section 1608.3 and Section 1611.2. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1502.2.</p>			X	Increased in costs in some cases due to evaluating and/or modifying a structure that has been found to be unsafe from additional loading caused by re-roofing.	Increased safety.
S51-22	<p>Revise as follows:</p> <p>1512.2 Roof replacement. <i>Roof replacement</i> shall include the removal of all existing layers of <i>roof assembly</i> materials down to the <i>roof deck</i>.</p> <p>Exception Exceptions:</p> <p>1. Where the existing <i>roof assembly</i> includes an ice barrier membrane that is adhered to the <i>roof deck</i> <u>and the existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing</u>, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507 <u>where permitted by the roof covering manufacturer and self-adhered underlayment manufacturer.</u></p>	X			Cost decreases when existing layer permitted to remain in place.	Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p><u>2. Where the existing roof includes a self-adhered underlayment and the existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing, the existing self-adhered underlayment shall be permitted to remain in place and covered with an underlayment complying with Table 1507.1.1(1), Table 1507.1.1(2), and Table 1507.1.1(3).</u></p> <p><u>3. Where the existing roof includes one layer of self-adhered underlayment and the existing layer cannot be removed without damaging the roof deck, a second layer of self-adhered underlayment is permitted to be installed over the existing self-adhered underlayment provided the following conditions are met:</u></p> <p><u>3.1. It is permitted by the roof covering manufacturer and new self-adhered underlayment manufacturer,</u></p> <p><u>3.2. The existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing, and</u></p> <p><u>3.3. The second layer of self-adhered underlayment is installed such that buildup of material at walls, valleys, roof edges, end laps, and side laps does not exceed two layers.</u></p>					
S58-22 Part I	<p>Revise as follows:</p> <p>[A] 110.3.6 Lath, gypsum board and gypsum panel product inspection. Lath, gypsum board and <i>gypsum panel product</i> inspections shall be made after lathing, <i>gypsum board</i> and <i>gypsum panel products</i>, interior and exterior, are in place, but before any plastering is applied or <i>gypsum board</i> and <i>gypsum panel product</i> joints and fasteners are taped and finished.</p> <p>Exception: Gypsum board and gypsum panel products that are not part of a fire-resistance-rated assembly or a shear assembly.</p> <p>1512.3 Roof recovering. Where the application of a new <i>roof covering</i> over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with <i>gypsum panel products</i> board, mineral fiber, glass fiber or other approved materials securely fastened in place.</p>		X			Editorial.
S58-22 Part II	<p>Revise as follows:</p> <p>R109.1.5.1 Fire-resistance-rated construction inspection. Where fire-resistance-rated construction is required between <i>dwelling units</i> or due to location on property, the <i>building official</i> shall require an inspection of such construction after lathing or gypsum</p>		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE				
		Decrease	Neutral	Increase						
							Sub Code:			
	board or gypsum panel products are in place, but before any plaster is applied, or before board or panel joints and fasteners are taped and finished.									
S62-22	<p>Revise as follows:</p> <p>TABLE 1504.2 CLASSIFICATION OF STEEP SLOPE ROOF SHINGLES TESTED IN ACCORDANCE WITH ASTM D3161OR D7158</p> <p>Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; font-size: small;">MAXIMUM BASIC WIND SPEED, V, FROM FIGURES 1609.3(1)–(8) (4) OR ASCE 7(mph)</td> <td style="width: 25%; font-size: small;">MAXIMUM ALLOWABLE STRESS DESIGN WIND SPEED, V_a, FROM Table 1609.3.1 (mph)</td> <td style="width: 25%; font-size: small;">ASTM D7158 CLASSIFICATION</td> <td style="width: 25%; font-size: small;">ASTM D3161 or UL 7103 CLASSIFICATION</td> </tr> </table> <p>1504.6 Edge systems for low-slope roofs. Metal edge systems, except gutters and counterflashing, installed on built-up, modified bitumen and single-ply roofsystems having a slope less than 2 units vertical in 12 units horizontal (2:12) shall be designed and installed for wind <i>loads</i> in accordance with Chapter 16 and tested for resistance in accordance with Test Methods RE-1, RE-2 and RE-3 of ANSI/SPRI ES-1, except basic design <i>wind speed</i>, V, shall be determined from Figures 1609.3(1) through 1609.3(12) <u>1609.3(4)</u> as applicable.</p> <p>1609.1.1 Determination of wind loads. Wind <i>loads</i> on every building or structure shall be determined in accordance with Chapters 26 to 30 of ASCE 7. The type of opening protection required, the basic design <i>wind speed</i>, V, and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.</p> <p>Exceptions:</p> <p><u>1.</u></p> <p>The wind speeds in Figures 1609.3(1) through 1609.3(12) 1609.3(4) are basic design wind speeds, V, and shall be converted in accordance with Section 1609.3.1 to allowable stress design wind speeds, V_{asd}, when the provisions of the standards referenced in Exceptions 4 and 5 are used.</p> <p>1609.3 Basic design wind speed. The basic design wind speed, V, in mph, for the determination of the wind loads shall be determined by Figures 1609.3(1) through 1609.3(12) <u>1609.3(4)</u>. The basic design wind speed, V, for use in the design of Risk Category <u>I</u> # buildings and structures shall be obtained from Figures 1609.3(1), 1609.3(5) and 1609.3(6). The basic design wind speed, V, for use in the design of Risk Category <u>II</u> # buildings and structures shall be obtained from Figures</p>	MAXIMUM BASIC WIND SPEED, V , FROM FIGURES 1609.3(1)–(8) (4) OR ASCE 7(mph)	MAXIMUM ALLOWABLE STRESS DESIGN WIND SPEED, V_a , FROM Table 1609.3.1 (mph)	ASTM D7158 CLASSIFICATION	ASTM D3161 or UL 7103 CLASSIFICATION		X			Updated wind loads
MAXIMUM BASIC WIND SPEED, V , FROM FIGURES 1609.3(1)–(8) (4) OR ASCE 7(mph)	MAXIMUM ALLOWABLE STRESS DESIGN WIND SPEED, V_a , FROM Table 1609.3.1 (mph)	ASTM D7158 CLASSIFICATION	ASTM D3161 or UL 7103 CLASSIFICATION							

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1609.3(2), 1609.3(7) and 1609.3(8). The basic design wind speed, V, for use in the design of Risk Category III IV buildings and structures shall be obtained from Figures 1609.3(3), 1609.3(9) and 1609.3(10). The basic design wind speed, V, for use in the design of Risk Category IV V buildings and structures shall be obtained from Figures 1609.3(4), 1609.3(11) and 1609.3(12). Basic wind speeds for Hawaii, US Virgin Islands, and Puerto Rico shall be determined by using the ASCE Wind Design Geodatabase. The ASCE Wind Design Geodatabase is available at https://asce7hazardtool.online, or an approved equivalent. The basic design wind speed, V, for the special wind regions indicated near mountainous terrain and near gorges shall be in accordance with local jurisdiction requirements. The basic design wind speeds, V, determined by the local jurisdiction shall be in accordance with Chapter 26 of ASCE 7. In nonhurricane-prone regions, when the basic design wind speed, V, is estimated from regional climatic data, the basic design wind speed, V, shall be determined in accordance with Chapter 26 of ASCE 7.</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>4. <u>Location-specific basic wind speeds shall be permitted to be determined using the ASCE Wind Design Geodatabase.</u></p> <p>5. Wind speeds for Hawaii, US Virgin Islands, and Puerto Rico shall be determined from the ASCE Wind Design Geodatabase.</p> <p>6. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions. Site specific values for selected special wind regions shall be permitted to be determined using the ASCE Wind Design Geodatabase.</p> <p>7. Wind speeds correspond to approximately a 15% probability of exceedance in 50 years (Annual Exceedance Probability = 0.00333, MRI = 300 years).</p> <p>8. The ASCE Wind Design Geodatabase can be accessed at the ASCE 7 Hazard Tool (https://asce7hazardtool.online) or approved equivalent.</p> <p>1609.3.1 Wind speed conversion. Where required, the basic design wind speeds of Figures 1609.3(1) through 1609.3(12) (4) shall be converted to allowable stress design wind speeds, V_{asd}, using Table 1609.3.1 or Equation 16-17.</p> $V_{asd} = V\sqrt{0.6}$ <p>where: V_{asd} = Allowable stress design wind speed applicable to methods specified in Exceptions 4 and 5 of Section 1609.1.1. V = Basic design wind speeds determined from Figures 1609.3(1) through 1609.3(12) (4).</p> <p>Committee Modification: Figure 1609.3(2): Notes: 7. Wind speeds correspond to approximately a 15% <u>7%</u> probability of exceedance in 50 years (Annual Exceedance Probability = 0.00143, MRI = 700 years).</p> <p>Figure 1609.3(3): Notes: 7. Wind speeds correspond to approximately a 15% <u>3%</u> probability of exceedance in 50 years (Annual Exceedance Probability = 0.000588, MRI = 1,700 years).</p> <p>Figure 1609.3(4): Notes: 7. Wind speeds correspond to approximately a 15% <u>1.6%</u> probability of exceedance in 50 years (Annual Exceedance Probability = 0.00033, MRI = 3,000 years).</p> <p>Add new standard(s) as follows: <u>7-22 Minimum Design Loads and Associated Criteria for Buildings and Other Structures</u></p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S63-22	<p>Revise as follows:</p> <p>1603.1.4 Wind and tornado design data. The following information related to wind loads and tornado loads, and where required by Section 1609.5 <u>tornado loads</u> shall be shown, regardless of whether wind <u>or tornado loads</u> govern the design of the lateral force-resisting system of the structure:</p> <ol style="list-style-type: none"> 1. Basic design <i>wind speed, V (mph)</i>, <u>tornado speed, V_T (mph)</u>, miles per hour and <i>allowable stress design wind speed, V_{asd} (mph)</i>, as determined in accordance with Section 1609.3.1. 2. <i>Risk category.</i> 3. <u>Effective plan area, A_e</u>, for tornado design in accordance with Chapter 32 of ASCE 7. 3. 4. Wind exposure. Applicable wind direction if more than one wind exposure is utilized. 4. 5. <u>Applicable internal pressure coefficients, and applicable tornado internal pressure coefficients.</u> 5. 6. Design wind pressures and their applicable zones with dimensions to be used for exterior component and cladding materials not specifically designed by the <i>registered design professional</i> responsible for the design of the structure, pounds per square foot (kN/m^2). <u>Where design for tornado loads is required, the design pressures shown shall be the maximum of wind or tornado pressures.</u> <p>1605.1 General. Buildings and <i>other structures</i> and portions thereof shall be designed to resist the strength load combinations specified in ASCE 7, Section 2.3, the <i>allowable stress design</i> load combinations specified in ASCE 7, Section 2.4, or the alternative <i>allowable stress design</i> load combinations of Section 1605.2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. The modifications to load combinations of ASCE 7 Section 2.3, ASCE 7 Section 2.4, and Section 1605.2 specified in ASCE 7 Chapters 18 and 19 shall apply. 2. Where the allowable stress design load combinations of ASCE 7 Section 2.4 are used, flat roof <i>snowloads</i> of 30 pounds per square foot ($1.44 kN/m^2$) and <i>roof live loads</i> of 30 pounds per square foot ($1.44 kN/m^2$) or less need not be combined with seismic load. Where flat roof <i>snow loads</i> exceed 30 pounds per square foot ($1.44 kN/m^2$), 20 percent shall be combined with seismic loads. 			X	Increases cost of construction for Risk Category III and IV buildings and other structures located in tornado-prone region where tornado loads govern the design.	

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact


CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>3. Where the allowable stress design load combinations of ASCE 7 Section 2.4 are used, crane hook loads need not be combined with <i>roof live loads</i> or with more than three-fourths of the snow load or one-half of the wind loads.</p> <p>4. <u>Where design for tornado loads are is required, the alternative allowable stress design load combinations of Section 1605.2 shall not apply when tornado loads govern the design.</u></p> <p>1607.14 Roof loads. The structural supports of roofs and <i>marquees</i> shall be designed to resist wind and, where applicable, tornado and snow and earthquake <i>loads</i>, in addition to the <i>dead load</i> of construction and the appropriate <i>live loads</i> as prescribed in this section, or as set forth in Table 1607.1. The <i>live loads</i> acting on a sloping surface shall be assumed to act vertically on the horizontal projection of that surface.</p> <p>1607.14.3 Awnings and canopies. <i>Awnings</i> and <i>canopies</i> shall be designed for uniform <i>live loads</i> as required in Table 1607.1 as well as for snow <i>loads</i> and wind and <u>tornado loads</u> as specified in Sections 1608 and 1609.</p> <p>Add new text as follows:</p> <p>1609.5 Tornado Loads. <u>The design and construction of Risk Category III and IV buildings and other structures located in the tornado-prone region as shown in Figure 1609.5 shall be in accordance with Chapter 32 of ASCE 7, except as modified by this code.</u></p>  <p>FIGURE 1609.5 TORNADO-PRONE REGION</p> <p>Revise as follows:</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1609.5 1609.6 Roof systems. Roof systems shall be designed and constructed in accordance with Sections 1609.5.1 1609.6.1 through 1609.5.3, <u>1609.6.3</u> as applicable.</p> <p>1609.5.1 1609.6.1 Roof deck. The <i>roof deck</i> shall be designed to withstand the <u>greater</u> of wind pressures <u>or</u> <u>tornado pressures</u> determined in accordance with ASCE 7.</p> <p>1609.5.2 1609.6.2 Roof coverings. <i>Roof coverings</i> shall comply with Section 1609.5.1 <u>1609.6.1</u>.</p> <p>Exception: Rigid tile <i>roof coverings</i> that are air permeable and installed over a <i>roof deck</i> complying with Section 1609.5.1 <u>1609.6.1</u> are permitted to be designed in accordance with Section 1609.5.3.</p> <p>Asphalt shingles installed over a <i>roof deck</i> complying with Section 1609.5.1 <u>1609.6.1</u> shall comply with the wind-resistance requirements of Section <u>1504.2</u>.</p> <p>Add new text as follows:</p> <p><u>1609.6.3 Rigid Tile</u> . <u>Wind and tornado loads on rigid tiles shall comply with Sections 1609.6.3.1 or 1609.6.3.2, as applicable.</u></p> <p>Revise as follows:</p> <p>1609.5.3 1609.6.3.1 Rigid tile Wind loads. <i>Wind loads</i> on rigid tile <i>roof coverings</i> shall be determined in accordance with the following equation:</p> <p>Add new text as follows:</p> <p><u>1609.6.3.2 Tornado Loads.</u> <u>Tornado loads on rigid tile roof coverings shall be determined in accordance with Section 1609.6.3.1, replacing</u> <u>q_h with q_{hT} and (GC_p) with $K_{VT}(GC_p)$ in Equation 16-18, where:</u> <u>q_{hT} = tornado velocity pressure, psf (kN/m²) determined in accordance with Section 32.10 of ASCE 7.</u> <u>K_{VT} = tornado pressure coefficient adjustment factor for vertical winds, determined in accordance with Section 32.14 of ASCE 7.</u></p> <p>Revise as follows:</p> <p>2308.2.3 Allowable loads. <i>Loads</i> shall be in accordance with Chapter 16 and shall not exceed the following:</p> <ol style="list-style-type: none"> 1. Average <i>dead loads</i> shall not exceed 15 psf (718 N/m²) for combined roof and ceiling, <i>exterior walls</i>, floors and partitions. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Subject to the limitations of Section 2308.6.10, stone or masonry <i>veneer</i> up to the less of 5 inches (127 mm) thick or 50 pounds per square foot (2395 N/m²) and installed 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>in accordance with Chapter 14 is permitted to a height of 30 feet (9144 mm) above a noncombustible foundation, with an additional 8 feet (2439) permitted for <i>gable</i> ends.</p> <p>2. Concrete or masonry fireplaces, heaters and chimneys shall be permitted in accordance with the provisions of this code.</p> <p>2. <i>Live loads</i> shall not exceed 40 psf (1916 N/m²) for floors. Exception: <i>Live loads</i> for concrete slab-on-ground floors in <i>Risk Categories</i> I and II shall be not more than 125 psf.</p> <p>3. Ground snow <i>loads</i> shall not exceed 50 psf (2395 N/m²).</p> <p>4. <u>Where design for tornado loads is required, tornado loads on the main wind force resisting system and all components and cladding shall not exceed the corresponding wind loads on these same elements.</u></p> <p>Add new standard(s) as follows: <u>7-22 Minimum Design Loads and Associated Criteria for Buildings and Other Structures</u></p>					
S66-22	<p>Revise as follows: 1603.1 General. <i>Construction documents</i> shall show the <u>material</u>, size, section and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.9 shall be indicated on the <i>construction documents</i>.</p> <p>Exception: <i>Construction documents</i> for buildings constructed in accordance with the <i>conventional light-frame construction</i> provisions of Section 2308 shall indicate the following structural design information:</p> <ol style="list-style-type: none"> 1. Floor and roof dead and live loads. 2. Ground snow load, p_g. 3. Basic design wind speed, V, miles per hour (mph) (km/hr) and allowable stress design wind speed, V_{asd}, as determined in accordance with Section 1609.3.1 and wind exposure. 4. <i>Seismic design category</i> and <i>site class</i>. 5. Flood design data, if located in <i>flood hazard areas</i> established in Section 1612.3. 6. Design load-bearing values of soils. 7. Rain load data. 		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S69-22	<p>Revise as follows:</p> <p>1604.4 Analysis. <i>Load effects</i> on structural members and their connections shall be determined by methods of structural analysis that take into account equilibrium, general stability, geometric compatibility and both short- and long-term material properties.</p> <p>Members that tend to accumulate residual deformations under repeated service <i>loads</i> shall have included in their analysis the effects of added deformations expected to occur during their service life.</p> <p>Any system or method of construction to be used shall be based on a rational analysis in accordance with well-established principles of mechanics. Such analysis shall result in a system that provides a complete <i>load</i> path capable of transferring <i>loads</i> from their point of origin to the load-resisting elements. The total lateral force shall be distributed to the various vertical elements of the lateral force-resisting system in proportion to their rigidities, considering the rigidity of the horizontal bracing system or <i>diaphragm</i>. Rigid elements assumed not to be a part of the lateral force-resisting system are permitted to be incorporated into buildings provided that their effect on the action of the system is considered and provided for in the design. <u>Where a diaphragm is not permitted to be idealized as either flexible or rigid in accordance with ASCE 7 or for wood diaphragms in accordance with AWC SDPWS, it is permitted to perform an envelope analysis of the structure using a flexible and rigid diaphragm analysis separately and designing each component for the more severe load condition in lieu of a semirigid diaphragm analysis. A diaphragm is rigid for the purpose of distribution of story shear and torsional moment when the lateral deformation of the diaphragm is less than or equal to two times the average story drift.</u> Where required by ASCE 7, provisions shall be made for the increased forces induced on resisting elements of the structural system resulting from torsion due to eccentricity between the center of application of the lateral forces and the center of rigidity of the lateral force-resisting system. Every structure shall be designed to resist the effects caused by the forces specified in this chapter, including overturning, uplift and sliding. Where sliding is used to isolate the elements, the effects of friction between sliding elements shall be included as a force.</p>		X			Provides alternate diaphragm analysis approach.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
S71-22	<p>Revise as follows: 1604.5 Risk category. Each building and structure shall be assigned a <i>risk category</i> in accordance with Table 1604.5. Where a referenced standard specifies an occupancy category, the <i>risk category</i> shall not be taken as lower than the occupancy category specified therein. Where a referenced standard specifies that the assignment of a <i>risk category</i> be in accordance with ASCE 7, Table 1.5-1, Table 1604.5 shall be used in lieu of ASCE 7, Table 1.5-1.</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> 1. The assignment of buildings and structures to Tsunami <i>Risk Categories</i> III and IV is permitted to be in accordance with Section 6.4 of ASCE 7. 2. <u>Free standing parking garages not used for the storage of emergency services vehicles, and not providing means of egress for buildings or structures assigned to a higher risk category, shall be assigned to Risk Category II.</u> 	X			Depending on size, risk category and design.	Classification allows more efficient designs.
S72-22	<p>Revise as follows: TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES Portions of table not shown remain unchanged.</p> <p>a. For purposes of occupant load calculation, occupancies required by Table 1004.5 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load. <u>The floor area for vehicular drive aisles shall be permitted to be excluded in the determination of net floor area in parking garages.</u></p>		X			Editorial.
S74-22	<p>Revise as follows: TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES</p>		X		Cost increases in Earthquake Zones.	Increased safety.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY		IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE									
			Decrease	Neutral	Increase											
Sub Code:																
	<table border="1"> <thead> <tr> <th>RISK CATEGORY</th> <th>NATURE OF OCCUPANCY</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: Agricultural facilities. Certain temporary facilities. Minor storage facilities.</td> </tr> <tr> <td>II</td> <td>Buildings and other structures except those listed in Risk Categories I, III and IV.</td> </tr> <tr> <td>III</td> <td>Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. Buildings and other structures containing one or more public assembly spaces, each having an occupant load greater than 300 and a cumulative occupant load of these public assembly spaces of greater than 2,500. Buildings and other structures containing Group E or Group I-4 occupancies or combination thereof, with an occupant load greater than 250. Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. Group I-2, Condition 1 occupancies with 50 or more care recipients. Group I-2, Condition 2 occupancies not having emergency surgery or emergency treatment facilities. Group I-3 occupancies. Any other occupancy with an occupant load greater than 5,000^b. Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the <u>International Fire Code</u>, and Are sufficient to pose a threat to the public if released.^b</td> </tr> <tr> <td>IV</td> <td>Buildings and other structures designated as essential facilities and buildings where loss of function represents a substantial hazard to occupants, including but not limited to: Group I-2 occupancies- Condition 2 occupancies having emergency surgery or emergency treatment facilities. Ambulatory care facilities having emergency surgery or emergency treatment facilities. Fire, rescue, ambulance and police stations and emergency vehicle garages. Designated earthquake, hurricane or other emergency shelters. Designated emergency preparedness, communications and operations centers and other facilities required for emergency response. Power-generating stations and other public utility facilities required as emergency backup facilities for Risk Category IV structures. Buildings and other structures containing quantities of highly toxic materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(2) or per outdoor control area in accordance with the <u>International Fire Code</u>, and Are sufficient to pose a threat to the public if released.^b Aviation control towers, air traffic control centers and emergency aircraft hangars. Buildings and other structures having critical national defense functions. 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S75-22	<p>Revise as follows: TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES</p>			X		Cost increases in Earthquake Zones.	Increased safety.									

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

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580-22	<p>Revise as follows: 1604.5.1 Multiple occupancies. Where a building or structure is occupied by two or more occupancies not included in the same <i>risk category</i>, it shall be assigned the classification of the highest <i>risk category</i> corresponding to the various occupancies. Where buildings or structures have two or more portions that are structurally separated, each portion shall be separately classified. Where a separated portion of a building or structure provides required access to, required egress from or shares life safety components with another portion having a higher <i>risk category</i>, or provides required electrical, communications, mechanical,</p>	X			Clarification.										

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	<p><u>plumbing, or conveying support to another portion assigned to Risk Category IV, both portions shall be assigned to the higher risk category.</u></p> <p>Exception: Where a <i>storm shelter</i> designed and constructed in accordance with ICC 500 is provided in a building, structure or portion thereof normally occupied for other purposes, the <i>risk category</i> for the normal occupancy of the building shall apply unless the <i>storm shelter</i> is a designated emergency shelter in accordance with Table 1604.5.</p>					
S81-22	<p>Add new text as follows: 1604.5.2 Photovoltaic (PV) panel systems. <i>Photovoltaic (PV) panel systems and elevated PV support structures shall be assigned a risk category as follows:</i></p> <ol style="list-style-type: none"> 1. <u>Ground-mounted PV panel systems serving Group R-3 buildings shall be assigned as to Risk Category I.</u> 2. <u>Ground-mounted PV panel systems other than those described in Items 1 and 5 shall be assigned as to Risk Category I.</u> 3. <u>Elevated PV support structures other than those described in Items 4 and 6 shall be assigned as to Risk Category II.</u> 4. <u>Rooftop-mounted PV panel systems and elevated PV support structures installed on top of buildings shall be assigned a to the same risk category that is the same as the risk category of the building on which they are mounted.</u> 5. <u>PV panel systems and elevated PV support structures paired with energy storage systems (ESS) and serving as a dedicated, stand-alone source of backup power for Risk Category IV buildings shall be assigned as to Risk Category IV.</u> 6. <u>Elevated PV support structures dedicated to where the usable space underneath is used for ``parking of emergency vehicles shall be assigned as to Risk Category IV.</u> 		X			Clarification.
S82-22	<p>Revise as follows: 1604.8.2 Structural walls. Walls that provide vertical load-bearing resistance or lateral shear resistance for a portion of the structure shall be anchored to the roof and to all floors and members that provide lateral support for the wall or that are supported by the wall. The connections shall be capable of resisting the horizontal forces <u>that result from the application of the prescribed loads.</u> The required earthquake out-of-plane loads are specified in Section 1.4.4 of ASCE 7 for walls of structures assigned to <i>Seismic Design Category A</i> and to Section 12.11 of</p>			X	Cost of wall anchorage increases where designs may have incorrectly been ignoring non-earthquake loading.	Increased safety.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	ASCE 7 for walls of structures assigned to all other <i>seismic design categories</i> . Required anchors in masonry walls of hollow units or <i>cavity walls</i> shall be embedded in a reinforced grouted structural element of the wall. See Sections 1609 for wind design requirements and 1613 for earthquake design requirements.					
S84-22	<p>Revise as follows:</p> <p>1606.1 General. <i>Dead loads</i> are those <i>loads</i> defined in Chapter 2 of this code. <i>Dead loads</i> shall be considered to be permanent loads. <u>Buildings, structures, and parts thereof shall be designed to resist the effects of dead loads.</u></p> <p>1607.1 General. <i>Live loads</i> are those loads defined in Chapter 2 of this code. <u>Buildings, structures, and parts thereof shall be designed to resist the effects of live loads.</u></p> <p>Add new standard(s) as follows:</p> <p><u>7-22 Minimum Design Loads and Associated Criteria for Buildings and Other Structures</u></p>		X			Editorial.
S85-22	<p>Revise as follows:</p> <p>1607.6 Helipads. <u>Landing areas designed for a design basis helicopter with maximum take-off weight of 3,000 pounds (13.35 kN) shall be identified with a 3,000-pound (13.34 kN) weight limitation. The landing area weight limitation shall be indicated by the numeral "3" (kips) located in the bottom right corner of the landing area as viewed from the primary approach path. The indication for the landing area weight limitation shall be a minimum 5 feet (1524 mm) in height. Helipads shall be designed for the following live loads:</u></p> <p>1. A uniform live load, L, as specified in Items 1.1 and 1.2. This load shall not be reduced.</p> <p>1.1. 40 psf (1.92 kN/m²) where the design basis helicopter has a maximum take-off weight of 3,000 pounds (13.35 kN) or less.</p> <p>1.2. 60 psf (2.87 kN/m²) where the design basis helicopter has a maximum take-off weight greater than 3,000 pounds (13.35 kN).</p> <p>2. A single concentrated live load, L, of 3,000 pounds (13.35 kN) applied over an area of 4.5 inches by 4.5 inches (114 mm by 114 mm) and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated load is not required to act concurrently with other uniform or concentrated live loads.</p>		X			Editorial.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>3. Two single concentrated live loads, L, 8 feet (2438 mm) apart applied on the landing pad (representing the helicopter's two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum take-off weight of the helicopter, and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated loads shall be applied over an area of 8 inches by 8 inches (203 mm by 203 mm) and are not required to act concurrently with other uniform or concentrated live loads.</p> <p>Landing areas designed for a design basis helicopter with maximum take-off weight of 3,000 pounds (13.35 kN) shall be identified with a 3,000-pound (13.34 kN) weight limitation. The landing area weight limitation shall be indicated by the numeral "3" (kips) located in the bottom right corner of the landing area as viewed from the primary approach path. The indication for the landing area weight limitation shall be a minimum 5 feet (1524 mm) in height.</p> <p>Add new text as follows: 1607.6.1 Concentrated loads. Helipads shall be designed for the following concentrated live loads:</p> <ol style="list-style-type: none"> <u>1. A single concentrated live load, L, of 3,000 pounds (13.35 kN) applied over an area of 4.5 inches by 4.5 inches (114 mm by 114 mm) and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated load is not required to act concurrently with other uniform or concentrated live loads.</u> <u>2. Two single concentrated live loads, L, 8 feet (2438 mm) apart applied on the landing pad (representing the helicopter's two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum take-off weight of the helicopter, and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated loads shall be applied over an area of 8 inches by 8 inches (203 mm by 203 mm) and are not required to act concurrently with other uniform or concentrated live loads.</u> <p>Revise as follows: TABLE 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L₀, AND MINIMUM CONCENTRATED LIVE LOADS</p>					

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S92-22	<p>Revise as follows: 1507.15 Vegetative roofs and landscaped roofs. <i>Vegetative roofs and landscaped roofs shall comply with the requirements of this chapter, Section 1607.14.2.2 1607.13.2 and the International Fire Code.</i> 1603.1.2 Roof live load. <i>The roof live load used in the design shall be indicated for roof areas (Section 1607.14).</i> 1607.1 General. <i>Live loads are those loads defined in Chapter 2 of this code.</i> 1607.2 Loads not specified. <i>For occupancies or uses not designated in Section 1607, the live load shall be determined in accordance with a method approved by the building official.</i> 1607.3 Uniform live loads. <i>The live loads used in the design of buildings and other structures shall be the maximum loads expected by the intended use or occupancy but shall not be less than the minimum uniformly distributed live loads given in Table 1607.1. Live loads acting on a sloping surface shall be assumed to act vertically on the horizontal projection of that surface.</i> 1607.13 1607.3.1 Distribution of floor loads. Partial loading of floors. <i>Where uniform floor live loads are involved in the design of structural members arranged so as to create continuity, the</i></p>		X		Editorial.																

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	<p>minimum applied loads shall be the full <i>dead loads</i> on all spans in combination with the floor <i>live loads</i> on spans selected to produce the greatest <i>load effect</i> at each location under consideration. Floor <u>Uniform floor <i>live loads</i> applied to selected spans</u> are permitted to be reduced in accordance with Section 1607.12 .</p> <p>1607.14.1 1607.3.2 Distribution of roof loads Partial loading of roofs. Where uniform roof <i>live loads</i> are reduced to less than 20 psf (0.96 kN/m²) in accordance with Section 1607.14.2.1 <u>1607.13.1</u> and are applied to the design of structural members arranged so as to create continuity, the reduced roof <i>live load</i> shall be applied to adjacent spans or to alternate spans, whichever produces the most unfavorable <i>load effect</i>. See Section 1607.14.2 for reductions in minimum roof <i>live loads</i> and Section 7.5 of ASCE 7 for partial snow loading.</p> <p>1607.12 Reduction in uniform live loads. Except for uniform <i>live loads</i> at roofs, all other minimum uniformly distributed <i>live loads</i>, <i>L_o</i>, in Table 1607.1 are permitted to be reduced in accordance with Section 1607.12.1 or 1607.12.2. Uniform <i>live loads</i> at roofs are permitted to be reduced in accordance with Section 1607.14.2 <u>1607.13</u>.</p> <p>1607.14 Roof loads. The structural supports of roofs and <i>marquees</i> shall be designed to resist wind and, where applicable, snow and earthquake <i>loads</i>, in addition to the <i>dead load</i> of construction and the appropriate <i>live loads</i> as prescribed in this section, or as set forth in Table 1607.1. The <i>live loads</i> acting on a sloping surface shall be assumed to act vertically on the horizontal projection of that surface.</p> <p>1607.14.2 1607.13 Reduction in uniform roof live loads. The minimum uniformly distributed <i>live loads</i> of roofs and <i>marquees</i>, <i>L_o</i>, in Table 1607.1 are permitted to be reduced in accordance with Section 1607.14.2.1 <u>1607.13.1</u>.</p> <p>1607.14.2.1 1607.13.1 Ordinary roofs, awnings and canopies. Ordinary flat, pitched and curved roofs, and <i>awnings</i> and canopies other than of fabric construction supported by a skeleton structure, are permitted to be designed for a reduced uniformly distributed <i>roof live load</i>, <i>L_r</i>, as specified in the following equations or other controlling combinations of <i>loads</i> as specified in Section 1605, whichever produces the greater <i>load effect</i>.</p>					

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	<p>1607.14.2.2 1607.13.2 Occupiable roofs. Areas of roofs that are occupiable, such as <i>vegetative roofs</i>, landscaped roofs or for assembly or other similar purposes, and <i>marquees</i> are permitted to have their uniformly distributed <i>live loads</i> reduced in accordance with Section 1607.12 .</p> <p>1607.14.3 1607.14 Awnings and canopies. <i>Awnings</i> and canopies shall be designed for uniform <i>live loads</i> as required in Table 1607.1 as well as for snow <i>loads</i> and wind <i>loads</i> as specified in Sections 1608 and 1609.</p> <p>1607.14.4 1607.15 Photovoltaic panel systems. Roof structures that provide support for <i>photovoltaic panel systems</i> shall be designed in accordance with Sections 1607.14.4.1 <u>1607.15.1</u> through 1607.14.4.5 <u>1607.15.5</u> , as applicable.</p> <p>1607.14.4.1 1607.15.1 Roof live load. Roof structures that support <i>photovoltaic panel systems</i> shall be designed to resist each of the following conditions:</p> <ol style="list-style-type: none"> 1. Applicable uniform and concentrated roof <i>loads</i> with the <i>photovoltaic panel system dead loads</i>. Exception: <i>Roof live loads</i> need not be applied to the area covered by <i>photovoltaic panels</i> where the clear space between the panels and the roof surface is 24 inches (610 mm) or less. 2. Applicable uniform and concentrated roof loads without the <i>photovoltaic panel system</i> present. <p>1607.14.4.2 1607.15.2 Photovoltaic panels or modules. The structure of a roof that supports solar <i>photovoltaic panels</i> or modules shall be designed to accommodate the full solar <i>photovoltaic panels</i> or modules and ballast <i>dead load</i>, including concentrated <i>loads</i> from support frames in combination with the <i>loads</i> from Section 1607.14.4.1 <u>1607.15.1</u> and other applicable <i>loads</i>. Where applicable, snow drift <i>loads</i> created by the <i>photovoltaic panels</i> or modules shall be included.</p> <p>1607.14.4.3 1607.15.3 Photovoltaic panels installed on open grid roof structures. Structures with open grid framing and without a <i>roof deck</i> or sheathing supporting <i>photovoltaic panel systems</i> shall be designed to support the uniform and concentrated <i>roof live loads</i> specified in Section 1607.14.4.1 <u>1607.15.1</u>, except that the uniform <i>roof live load</i> shall be permitted to be reduced to 12 psf (0.57 kN/m²).</p>					

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	<p>1607.14.4.4 1607.15.4 Ground-mounted photovoltaic (PV) panel systems or modules installed as an independent structure. Ground-mounted photovoltaic (PV) panel systems that are independent structures and do not have accessible/occupied space underneath are not required to accommodate a roof photovoltaic <i>live load</i>. Other <i>loads</i> and combinations in accordance with Section 1605 shall be accommodated.</p> <p>1607.14.4.5 1607.15.5 Ballasted photovoltaic panel systems. Roof structures that provide support for ballasted <i>photovoltaic panel systems</i> shall be designed, or analyzed, in accordance with Section 1604.4; checked in accordance with Section 1604.3.6 for deflections; and checked in accordance with Section 1611 for ponding.</p> <p>1808.3 Design loads. Foundations shall be designed for the most unfavorable effects due to the combinations of <i>loads</i> specified in Section 2.3 or 2.4 of ASCE 7 or the alternative allowable stress design load combinations of Section 1605.2. The <i>dead load</i> is permitted to include the weight of foundations and overlying fill. Reduced <i>live loads</i>, as specified in Sections 1607.12 and 1607.14 <u>1607.13</u>, shall be permitted to be used in the design of foundations.</p> <p>3111.1 General. Solar energy systems shall comply with the requirements of this section.</p> <p>3111.1.1 Wind resistance. Rooftop-mounted photovoltaic (PV) panel systems and solar thermal collectors shall be designed in accordance with Section 1609.</p> <p>Revise as follows:</p> <p>3111.1.2 Roof live load. Roof structures that provide support for solar energy systems shall be designed in accordance with Section 1607.14.4 <u>1607.15</u>.</p>					
S94-22	<p>Revise as follows:</p> <p>1607.5 Partition loads. In office buildings and in other buildings where partition locations are subject to change, provisions for partition weight shall be made, whether or not partitions are shown on the construction documents, unless the specified live load is 80 psf (3.83 kN/m²) or greater. The partition <i>load</i> shall be not less than a uniformly distributed <i>live load</i> of 15 psf (0.72 kN/m²) and shall not be reduced per Section 1607.12.</p> <p>Exception: A partition <i>live load</i> is not required where the minimum specified <i>live load</i> is 80 psf (3.83 kN/m²) or greater.</p>		X			Editorial.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>Revise as follows:</p> <p>1607.6 Helipads. Helipads shall be designed for the following <i>live loads</i>:</p> <ol style="list-style-type: none"> 1. A uniform <i>live load, L</i>, as specified in Items 1.1 and 1.2. This <i>load</i> shall not be reduced. <ol style="list-style-type: none"> 1.1. 40 psf (1.92 kN/m²) where the design basis helicopter has a maximum take-off weight of 3,000 pounds (13.35 kN) or less. 1.2. 60 psf (2.87 kN/m²) where the design basis helicopter has a maximum take-off weight greater than 3,000 pounds (13.35 kN). 2. A single concentrated <i>live load, L</i>, of 3,000 pounds (13.35 kN) applied over an area of 4.5 inches by 4.5 inches (114 mm by 114 mm) and located so as to produce the maximum <i>load effects</i> on the structural elements under consideration. The concentrated <i>load</i> is not required to act concurrently with other uniform or concentrated <i>live loads</i>. 3. Two single concentrated <i>live loads, L</i>, 8 feet (2438 mm) apart applied on the landing pad (representing the helicopter’s two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum take-off weight of the helicopter, and located so as to produce the maximum <i>load effects</i> on the structural elements under consideration. The concentrated loads shall be applied over an area of 8 inches by 8 inches (203 mm by 203 mm) and are not required to act concurrently with other uniform or concentrated <i>live loads</i>. <p>Landing areas designed for a design basis helicopter with Helipads shall be marked to indicate the maximum take-off weight of 3,000 pounds (13.35 kN) shall be identified with a 3,000-pound (13.34 kN) weight limitation. The take-off landing area weight limitation shall be indicated in units of thousands of pounds and placed in a box that is by the numeral “3” (kips) located in the bottom right corner of the landing area as viewed from the primary approach path. The indication for the landing area weight limitation box shall be a minimum 5 feet (1524 mm) in height.</p>			X	Minimal cost for painted weight limitation marking.	Increased FAA safety compliance.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S95-22	<p>Revise as follows: 1607.6 Helipads. Helipads shall be designed for the following <i>live loads</i>:</p> <ol style="list-style-type: none"> A uniform <i>live load, L</i>, as specified in Items 1.1 and 1.2. This <i>load</i> shall not be reduced. 40 psf (1.92 kN/m²) where the design basis helicopter has a maximum take-off weight of 3,000 pounds (13.35 kN) or less. 60 psf (2.87 kN/m²) where the design basis helicopter has a maximum take-off weight greater than 3,000 pounds (13.35 kN). A single concentrated <i>live load, L</i>, of 3,000 pounds (13.35 kN) applied over an area of 4.5 inches by 4.5 inches (114 mm by 114 mm) and located so as to produce the maximum <i>load effects</i> on the structural elements under consideration. The concentrated <i>load</i> is not required to act concurrently with other uniform or concentrated <i>live loads</i>. Two single concentrated <i>live loads, L</i>, 8 feet (2438 mm) apart applied on the landing pad (representing the helicopter's two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum take-off weight of the helicopter, and located so as to produce the maximum <i>load effects</i> on the structural elements under consideration. The concentrated loads shall be applied over an area of 8 inches by 8 inches (203 mm by 203 mm) and are not required to act concurrently with other uniform or concentrated <i>live loads</i>. <p>Landing areas designed for a design basis helicopter with Helipads shall be marked to indicate the maximum take-off weight of 3,000 pounds (13.35 kN) shall be identified with a 3,000-pound (13.34 kN) weight limitation. The take-off landing area weight limitation shall be indicated in units of thousands of pounds and placed in a box that is by the numeral "3" (kips) located in the bottom right corner of the landing area as viewed from the primary approach path. The indication for the landing area weight limitation box shall be a minimum 5 feet (1524 mm) in height.</p>			X	Minimal.	Increased safety.
S97-22	<p>Revise as follows: 1607.7 Passenger vehicle garages. Floors in garages or and portions of a building used for the storage of motor vehicles shall be designed for the uniformly distributed <i>live loads</i> indicated in Table 1607.1 or the following concentrated <i>load</i>:</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1. For garages restricted to passenger vehicles accommodating not more than nine passengers, 3,000 pounds (13.35 kN) acting on an area of 4.5 inches by 4.5 inches (114 mm by 114 mm).</p> <p>2. For mechanical parking structures without slab or deck that are used for storing passenger vehicles only, 2,250 pounds (10 kN) per wheel.</p>					
S98-22	<p>Revise as follows: 1607.8.2 Fire truck and emergency vehicles. Where a structure or portions of a structure are accessed and loaded by fire department access vehicles and other similar emergency vehicles, <u>those portions of the structure subject to such loads</u> shall be designed for the greater of the following <i>loads</i>:</p> <ol style="list-style-type: none"> The actual operational <i>loads</i>, including outrigger reactions and contact areas of the vehicles as stipulated and <i>approved</i> by the building official. The live loading specified in Section 1607.8.1. <p><u>Emergency vehicle loads need not be assumed to act concurrently with other uniform live loads.</u></p>		X			Editorial.
S100-22	<p>Revise as follows: 1607.9.1 Handrails and guards. <i>Handrails and guards</i> shall be designed to resist a linear <i>load</i> of 50 pounds per linear foot (plf) (0.73 kN/m) in accordance with Section 4.5.1.1 of ASCE 7. <u>Glass handrail assemblies and guards shall comply with Section 2407.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> For one- and two-family dwellings, only the single concentrated <i>load</i> required by Section 1607.9.1.1 shall be applied. In Group I-3, F, H and S occupancies, for areas that are not accessible to the general public and that have an <i>occupant load</i> less than 50, the minimum <i>load</i> shall be 20 pounds per foot (0.29 kN/m). For roofs not intended for occupancy, <u>only the single concentrated load required by Section 1607.9.1.1 shall be applied.</u> 		X			Editorial.
S101-22	<p>Revise as follows: 1607.9.1.1 Concentrated load 1607.9.1.1 Handrails and guards. <i>Handrails and guards</i> shall be designed to resist a concentrated <i>load</i> of 200 pounds (0.89 kN) in accordance with Section 4.5.1 of ASCE 7. <u>Glass handrail assemblies and guards shall comply with Section 2407.</u></p>		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1607.9.1.1 Handrails and guards Uniform Load. <i>Handrails and guards</i> shall be designed to resist a linear <i>load</i> of 50 pounds per linear foot (plf) (0.73 kN/m) in accordance with Section 4.5.1.1 of ASCE 7. Glass handrail assemblies and guards shall comply with Section 2407. This load need not be assumed to act concurrently with the concentrated load specified in Section 1607.9.1</p> <p>Exceptions:</p> <ol style="list-style-type: none"> For one- and two-family dwellings, only the single concentrated <i>load</i> required by Section 1607.9.1.1 shall be applied. In Group I-3, F, H and S occupancies, for areas that are not accessible to the general public and that have an <i>occupant load</i> less than 50, the minimum <i>load</i> shall be 20 pounds per foot (0.29 kN/m). 					
S103-22	<p>Revise as follows:</p> <p>1607.17 1607.10 Fixed ladders. Fixed ladders with rungs shall be designed to resist a single concentrated <i>load</i> of 300 pounds (1.33 kN) in accordance with Section 4.5.4 of ASCE 7. Where rails of fixed ladders extend above a floor or platform at the top of the ladder, each side rail extension shall be designed to resist a single concentrated <i>load</i> of 100 pounds (0.445 kN) in accordance with Section 4.5.4 of ASCE 7. Ship's ladders shall be designed to resist the <i>stair loads</i> given in Table 1607.1.</p> <p>1607.10 1607.11 Vehicle barriers. <i>Vehicle barriers</i> for passenger vehicles shall be designed to resist a concentrated <i>load</i> of 6,000 pounds (26.70 kN) in accordance with Section 4.5.3 of ASCE 7. Garages accommodating trucks and buses shall be designed in accordance with an <i>approved</i> method that contains provisions for traffic railings.</p> <p>1607.11 1607.12 Impact loads. The <i>live loads</i> specified in Sections 1607.3 through 1607.10 1607.11 shall be assumed to include adequate allowance for ordinary impact conditions. Provisions shall be made in the structural design for uses and loads that involve unusual vibration and impact forces.</p>		X		Editorial.	
S105-22	<p>Revise as follows:</p> <p>1607.12.1.2 Heavy live loads. <i>Live loads</i> that exceed 100 psf (4.79 kN/m²) shall not be reduced.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> The <i>live loads</i> for members supporting two or more floors are permitted to be reduced by not greater than 20 percent, but the <u>reduced live load</u> shall be not less than <i>L</i> as calculated in Section 1607.12.1. For uses other than storage, where <i>approved</i>, additional <i>live load</i> reductions shall be permitted where shown by the 		X		Clarification.	

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p><i>registered design professional</i> that a rational approach has been used and that such reductions are warranted.</p> <p>1607.12.1.3 Passenger vehicle garages. The <i>live loads</i> shall not be reduced in passenger vehicle garages.</p> <p>Exception: The <i>live loads</i> for members supporting two or more floors are permitted to be reduced by not greater than 20 percent, but the <u>reduced live load</u> shall be not less than <i>L</i> as calculated in Section 1607.12.1.</p>					
S106-22	<p>Revise as follows:</p> <p>1607.12.2 Alternative uniform live load reduction. As an alternative to Section 1607.12.1 and subject to the limitations of Table 1607.1, uniformly distributed <i>live loads</i> are permitted to be reduced in accordance with the following provisions. Such reductions shall apply to slab systems, beams, girders, columns, piers, walls and foundations.</p> <p>1. <u>For <i>live loads</i> not exceeding 100 psf (4.79 kN/m²), the design live load for structural members supporting 150 square feet (13.94 m²) or more is permitted to be reduced in accordance with Equation 16-8.</u></p> <p>$R = 0.08(A - 150)$ (Equation 16-8)</p> <p>For SI: $R = 0.861(A - 13.94)$</p> <p>where:</p> <p><u><i>A</i> = Area of floor supported by the member, square feet (m²).</u></p> <p><u><i>R</i> = Reduction in percent.</u></p> <p>Such reduction shall not exceed the smallest of:</p> <p>1.1 <u>40 percent for members supporting one floor.</u></p> <p>1.2 <u>60 percent for members supporting two or more floors.</u></p> <p>1.3 <u><i>R</i> as determined by the following equation:</u></p> <p>$R = 23.1(1 + D/L_0)$(Equation 16-9)</p> <p>where:</p> <p><u><i>D</i> = Dead load per square foot (m²) of area supported.</u></p> <p><u><i>L₀</i> = Unreduced live load per square foot (m²) of area supported.</u></p> <p>2. <u>A reduction shall not be permitted where the <i>live load</i> exceeds 100 psf (4.79 kN/m²) except that the design live load for members supporting two or more floors is permitted to be reduced by not greater than 20 percent.</u></p> <p>Exception: For uses other than storage, <u>where approved, additional live load reductions shall be permitted where shown by the registered design professional that a rational</u></p>		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p><u>approach has been used and that such reductions are warranted.</u></p> <p>3. <u>A reduction shall not be permitted in passenger vehicle parking garages except that the <i>live loads</i> for members supporting two or more floors are permitted to be reduced by not greater than 20 percent.</u></p> <p>4. <u>For one-way slabs, the area, A, for use in Equation 16-8 shall not exceed the product of the slab span and a width normal to the span of 0.5 times the slab span.</u></p> <p>1. A reduction shall not be permitted where the <i>live load</i> exceeds 100 psf (4.79 kN/m²) except that the design <i>live load</i> for members supporting two or more floors is permitted to be reduced by not greater than 20 percent.</p> <p>Exception: For uses other than storage, where approved, additional <i>live load</i> reductions shall be permitted where shown by the <i>registered design professional</i> that a rational approach has been used and that such reductions are warranted.</p> <p>2. A reduction shall not be permitted in passenger vehicle parking garages except that the <i>live loads</i> for members supporting two or more floors are permitted to be reduced by not greater than 20 percent.</p> <p>3. For live loads not exceeding 100 psf (4.79 kN/m²), the design live load for any structural member supporting 150 square</p> <p>4. feet (13.94 m²) or more is permitted to be reduced in accordance with Equation 16-8</p> <p>4. For one-way slabs, the area, A, for use in Equation 16-8 shall not exceed the product of the slab span and a width normal to the span of 0.5 times the slab span.</p> <p>$R = 0.08(A - 150)$ Equation 16-8</p> <p>For SI: $R = 0.861(A - 13.94)$ Equation 16-9</p> <p>Such reduction shall not exceed the smallest of:</p> <p>1. 40 percent for members supporting one floor.</p> <p>2. 60 percent for members supporting two or more floors.</p> <p>3. R as determined by the following equation:</p> <p>$R = 23.1(1 + D/L_0)$</p> <p>where:</p> <p>A = Area of floor supported by the member, square feet (m²).</p> <p>D = Dead load per square foot (m²) of area supported.</p>				-	

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>L_o = Unreduced live load per square foot (m2) of area supported.</p> <p>R = Reduction in percent.</p>					
S109-22	<p>1607.14.2 Reduction in uniform roof live loads. The minimum uniformly distributed <i>live loads</i> of roofs, <i>marquees</i>, and canopies, L_o, in Table 1607.1 are permitted to be reduced in accordance with Section 1607.14.2.1.</p>		X			Clarification.
S110-22	<p>Delete without substitution:</p> <p>1607.14.3 Awnings and canopies. <i>Awnings</i> and canopies shall be designed for uniform <i>live loads</i> as required in Table 1607.1 as well as for snow <i>loads</i> and wind <i>loads</i> as specified in Sections 1608 and 1609.</p>		X			Editorial.
S112-22	<p>Revise as follows:</p> <p>1607.14.4.3 Photovoltaic panels installed on Elevated PV support structures with open grid roof structures framing. Structures <i>Elevated PV support structures</i> with open grid framing and without a <i>roof deck</i> or sheathing supporting photovoltaic panel systems shall be designed to support the uniform and concentrated <i>roof live loads</i> specified in Section 1607.14.4.1, except that the uniform <i>roof live load</i> shall be permitted to be reduced to 12 psf (0.57 kN/m²).</p>		X			Clarification.
S113-22	<p>Revise as follows:</p> <p>1607.14.4.4 Ground-mounted photovoltaic (PV) panel systems or modules installed as an independent structure. Ground-mounted photovoltaic (PV) panel systems that are independent structures and do not have accessible/occupied space underneath are not required to accommodate a roof photovoltaic <i>live load</i>. Other <i>loads</i> and combinations in accordance with Section 1605 shall be accommodated.</p>		X			Clarification.
S114-22	<p>Revise as follows:</p> <p>1607.15 Crane loads. The crane <i>live load</i> shall be the rated capacity of the crane. Design <i>loads</i> for the runway beams, including connections and support brackets, of moving bridge cranes and monorail cranes shall <u>be in accordance with Section 4.9 of ASCE 7</u>; include the maximum wheel loads of the crane and the vertical impact, lateral and longitudinal forces induced by the moving crane.</p> <p>Delete without substitution:</p> <p>1607.15.1 Maximum wheel load. The maximum wheel <i>loads</i> shall be the wheel <i>loads</i> produced by the weight of the bridge, as</p>		X			Editorial.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE								
		Decrease	Neutral	Increase										
Sub Code:														
	<p>applicable, plus the sum of the rated capacity and the weight of the trolley with the trolley positioned on its runway at the location where the resulting <i>load effect</i> is maximum.</p> <p>1607.15.2 Vertical impact force. The maximum wheel <i>loads</i> of the crane shall be increased by the following percentages to account for the effects of vertical impact or vibration:</p> <table border="1"> <tr> <td>Monorail cranes (powered)</td> <td>25 percent</td> </tr> <tr> <td>Cab-operated or remotely operated bridge cranes (powered)</td> <td>25 percent</td> </tr> <tr> <td>Pendant-operated bridge cranes (powered)</td> <td>10 percent</td> </tr> <tr> <td>Bridge cranes or monorail cranes with hand-gearred bridge, trolley and hoist</td> <td>0 percent</td> </tr> </table> <p>1607.15.3 Lateral force. The lateral force on crane runway beams with electrically powered trolleys shall be calculated as 20 percent of the sum of the rated capacity of the crane and the weight of the hoist and trolley. The lateral force shall be assumed to act horizontally at the traction surface of a runway beam, in either direction perpendicular to the beam, and shall be distributed with due regard to the lateral stiffness of the runway beam and supporting structure.</p> <p>1607.15.4 Longitudinal force. The longitudinal force on crane runway beams, except for bridge cranes with hand-gearred bridges, shall be calculated as 10 percent of the maximum wheel <i>loads</i> of the crane. The longitudinal force shall be assumed to act horizontally at the traction surface of a runway beam, in either direction parallel to the beam.</p>	Monorail cranes (powered)	25 percent	Cab-operated or remotely operated bridge cranes (powered)	25 percent	Pendant-operated bridge cranes (powered)	10 percent	Bridge cranes or monorail cranes with hand-gearred bridge, trolley and hoist	0 percent					
Monorail cranes (powered)	25 percent													
Cab-operated or remotely operated bridge cranes (powered)	25 percent													
Pendant-operated bridge cranes (powered)	10 percent													
Bridge cranes or monorail cranes with hand-gearred bridge, trolley and hoist	0 percent													
S116-22	<p>Revise as follows:</p> <p>[A] 108.1 General. The <i>building official</i> is authorized to issue a <i>permit</i> for temporary structures and temporary uses. Such <i>permits</i> shall be limited as to time of service, but shall not be permitted for more than 180 days. The <i>building official</i> is authorized to grant extensions for demonstrated cause. Structures designed to comply with Section 3103.5 shall not be in service for a period of more than 1-year unless an extension of time is granted.</p> <p>Revise as follows:</p> <p>1608.1 General. Design snow <i>loads</i> shall be determined in accordance with Chapter 7 of ASCE 7, but the design roof <i>load</i> shall be not less than that determined by Section 1607.</p>	X			Reduction in adopted loads in IBC Ch 16 and ASCE 7 for temporary structures reduces cost.	Reduction in adopted loads in IBC Ch 16 and ASCE 7 for temporary structures.								

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p><u>Exception: Temporary structures complying with Section 3103.5.1.1.</u> Revise as follows: 1609.1.1 Determination of wind loads. Wind loads on every building or structure shall be determined in accordance with Chapters 26 to 30 of ASCE 7. The type of opening protection required, the basic design wind speed, <i>V</i>, and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Subject to the limitations of Section 1609.1.1.1, the provisions of ICC 600 shall be permitted for applicable Group R-2 and R-3 buildings. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of AWC WFCM. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of AISI S230. Designs using NAAMM FP 1001. Designs using TIA-222 for antenna-supporting structures and antennas, provided that the horizontal extent of Topographic Category 2 escarpments in Section 2.6.6.2 of TIA-222 shall be 16 times the height of the escarpment. Wind tunnel tests in accordance with ASCE 49 and Sections 31.4 and 31.5 of ASCE 7. <u>Temporary structures complying with Section 3103.5.1.2.</u> <p>The wind speeds in Figures 1609.3(1) through 1609.3(12) are basic design wind speeds, <i>V</i>, and shall be converted in accordance with Section 1609.3.1 to allowable stress design wind speeds, <i>V_{asd}</i>, when the provisions of the standards referenced in Exceptions 4 and 5 are used.</p> <p>Revise as follows: 1612.2 Design and construction. The design and construction of buildings and structures located in <i>flood hazard areas</i>, including <i>coastal high hazard areas</i> and <i>coastal A zones</i>, shall be in accordance with Chapter 5 of ASCE 7 and ASCE 24.</p> <p><u>Exception: Temporary structures complying with Section 3103.5.1.5 3103.5.1.3.</u> Revise as follows:</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1613.1 Scope. Every structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with Chapters 11, 12, 13, 15, 17 and 18 of ASCE 7, as applicable. The <i>seismic design category</i> for a structure is permitted to be determined in accordance with Section 1613 or ASCE 7.</p> <p>1615.1 General. The design and construction of <i>Risk Category III</i> and <i>IV</i> buildings and structures located in the <i>Tsunami Design Zones</i> defined in the <i>Tsunami Design Geodatabase</i> shall be in accordance with Chapter 6 of ASCE 7, except as modified by this code.</p> <p><u>Exception: <i>Temporary structures</i> complying with Section 3103.5.1.6.</u></p> <p>Revise as follows:</p> <p>3103.1 General. The provisions of Sections 3103.1 through 3103.4 3103.7 shall apply to structures erected for a period of less than 180 days. <u><i>Temporary special event structures</i>, tents, umbrella structures and other membrane structures</u> erected for a period of less than 180 days shall also comply with the <i>International Fire Code</i>. Those <u><i>Temporary structures</i></u> erected for a longer period of time <u>and <i>public-occupancy temporary structures</i></u> shall comply with applicable sections of this code.</p> <p>Exception:</p> <ol style="list-style-type: none"> <u><i>Public-occupancy temporary structures</i> complying with Section 3103.1.1 shall be permitted to remain in service for 180 days or more but not more than 1 year when approved by the <i>Building Official</i>.</u> <u><i>Public-occupancy temporary structures</i> erected within the confines of an existing structure are not required to comply with Section 3103.5.</u> <p>Add new text as follows:</p> <p>3103.1.1 Extended period of service time. <u><i>Public-occupancy temporary structures</i> shall be permitted to remain in service for 180 days or more without complying with requirements in this code for new buildings or structures when where extensions for up to 1 year are granted by the <i>Building Official</i> in accordance</u></p>					

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>with Section 108.1 and when the following conditions are satisfied:</p> <ol style="list-style-type: none"> <u>1. Additional inspections as determined by the <i>Building Official</i> shall be performed to verify that site conditions and the approved installation comply with the conditions of approval at the time of final inspection.</u> <u>2. The <i>Building Official</i> shall perform follow up inspections after initial occupancy at intervals not exceeding 180 days to verify the site conditions and the installation conform to the approved site conditions and installation requirements.</u> <u>3. An examination shall be performed by a registered design professional to determine the adequacy of the <i>temporary structure</i> to resist the structural loads required in Section 3103.5.</u> <u>4. Relocation of the <i>temporary structures</i> shall require a new approval by the <i>Building Official</i>.</u> <u>5. The use or occupancy approved at the time of final inspection shall remain unchanged.</u> <p>Revise as follows: 3103.1.1 3103.1.2 Conformance. Temporary structures and uses shall conform to the structural strength, fire safety, <i>means of egress</i>, accessibility, light, <i>ventilation</i> and sanitary requirements of this code as necessary to ensure public health, safety and general welfare.</p> <p>3103.1.2 3103.1.3 Permit required. Temporary structures that cover an area greater than 120 square feet (11.16 m²), including connecting areas or spaces with a common <i>means of egress</i> or entrance that are used or intended to be used for the gathering together of 10 or more persons, shall not be erected, operated or maintained for any purpose without obtaining a <i>permit</i> from the <i>building official</i>.</p> <p>Add new text as follows: 3103.5 Structural requirements. <u><i>Temporary structures</i> shall comply with Chapter 16 the structural requirements of this code. <i>Public-occupancy temporary structures</i> shall be designed and erected to comply with structural requirements of this Section Section code and Sections 3103.5.1 through 3103.5.7..</u> <u><i>Temporary non-building structures ancillary to public assemblies or special events structures whose structural failure or collapse would endanger assembled public shall be assigned a risk</i></u> </p>					

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>category corresponding to the risk category of the public assembly. For the purposes of establishing an occupant load for the assembled public endangered by structural failure or collapse, the applicable occupant load determination in Section 1004.5 or 1004.6 shall be applied over the assembly area within a radius equal to 1.5 times the height of the temporary non-building structure.</p> <p><u>Exception:</u> Where approved, live loads less than those prescribed by Table 1607.1 shall be permitted, provided a registered design professional demonstrates that a rational approach has been used and that such reductions are warranted.</p> <p>3103.5.1 Structural loads. <i>Public-occupancy temporary structures</i> shall be designed in accordance with Sections 3103.5.1.1 through 3103.5.1.6. classified, based on the risk to human life, health, and welfare associated with damage or failure by nature of their occupancy or use, according to Table 1604.5 for the purposes of applying flood, wind, snow, earthquake, and ice provisions. Additionally, public assembly facilities that require more than 15 min to evacuate to a safe location, and any structure whose failure or collapse would endanger the public assembled near the structure, such as speaker stands or other temporary structures for public gatherings shall be classified as Risk Category III.</p> <p>3103.5.1.1 Dead. Dead loads on <i>public-occupancy temporary structures</i> shall be determined in accordance with Section 1606.</p> <p>3103.5.1.2 Live. Live loads on <i>public-occupancy temporary structures</i> shall be determined in accordance with Section 1607.</p> <p><u>Exception:</u> Where approved, live loads less than those prescribed by Table 1607.1 <i>Minimum Uniformly Distributed Live Loads, L_{UD}</i> and <i>Minimum Concentrated Live Loads</i> shall be permitted where shown by the registered design professional that a rational approach has been used and that such reductions are warranted.</p> <p>3103.5.1.42 Wind. Wind loads on <i>public-occupancy temporary structures</i> shall be determined in accordance with Section 1609 and Chapters 26 to 30 of ASCE 7. The design wind load shall be modified according to Table 3103.5.2.</p> <p>Exceptions</p> <ol style="list-style-type: none"> <u>Design wind loads on public-occupancy temporary structures that implement employ controlled occupancy measures per Section 3103.7.1</u> 3103.7 shall be permitted to be modified using a wind load reduction factor of 0.65 instead of the load reduction factors in Table 3103.5.2. 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>2. For public-occupancy temporary structures erected in a hurricane-prone region outside of hurricane season, the design basic wind speed, V, shall be set at the following 3-second gust basic wind speeds as follows depending on Risk Category:</u></p> <p><u>2.1. For Risk Category II use 115 mph,</u></p> <p><u>2.2. For Risk Category III use 120 mph, and</u></p> <p><u>2.3. For Risk Category IV use 125 mph.</u></p> <p>3103.5.1.5 3103.5.1.3 Flood loads. An Emergency Action Plan, in accordance with Section 3103.5.4, shall be required for public-occupancy temporary structures in a Flood Hazard Area. Where an Emergency Action Plan is approved by the building and fire official, public occupancy temporary structures need not be designed for flood loads specified in Section 1612. Controlled occupancy procedures in accordance with Section 3103.7 shall be implemented.</p> <p>3103.5.1.8 Tsunami. An Emergency Action Plan, in accordance with 3103.5.4, shall be submitted for public-occupancy temporary structures in a Tsunami Design Zone when requested by the Building or Fire Official. The public-occupancy temporary structure in a tsunami design zone need not be designed for tsunami loads specified in Section 1615. Controlled occupancy procedures in accordance with Section 3103.7, shall be implemented.</p> <p>3103.5.2 Foundations. Public-occupancy temporary structures may shall be permitted to be supported on the ground with temporary foundations when where approved by the Building Official. Consideration shall be given for the impacts of differential settlement when foundations do not extend below the ground or foundations supported on compressible materials. The presumptive load-bearing value for public-occupancy temporary structures supported on a pavement, slab on grade or on other Collapsible or Controlled Low Strength substrates soils such as beach sand or grass shall be assumed not to exceed 1,000 psf unless determined through testing and evaluation by a registered design professional. The presumptive load-bearing values listed in Table 1806.2 shall be permitted to be used for other supporting soil conditions.</p> <p>TABLE 3103.5.2 REDUCTION FACTORS FOR WIND LOADS FOR PUBLIC-OCCUPANCY TEMPORARY STRUCTURES</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

Risk Category	Service Life	
	≤ 10 yr	> 10 yr
II	0.8	1.0
III	0.9	1.0
IV	1.0	1.0

3103.5.3 Installation and maintenance inspections. A qualified person shall inspect *public-occupancy temporary structures* that are assembled using transportable and reusable materials; components shall be inspected when purchased or acquired and at least once per year. The inspection shall evaluate individual components, and the fully assembled structure, to determine suitability for use based on the requirements in ESTA ANSI E1.21. Inspection records shall be kept and shall be made available for verification by the *Building Official*. Additionally, *public-occupancy temporary structures* shall be inspected at regular intervals when in service to ensure that the structure continues to perform as designed and initially erected.

~~**3103.5.4 Emergency Action plans.** When required by the *Building Official*, Emergency Action Plans shall be submitted and approved. Emergency Action Plans shall include procedures to be implemented due to flood, wind, or snow hazards, or within the tsunami design zone. The action plans shall include provisions for evacuating and anchoring or removal of, securing, or dismantling *public-occupancy temporary structures*, in whole or in part, and removal to prevent damage to surrounding buildings or structures.~~

~~**3103.5.5 Durability and maintenance.** Reusable components used in the erection and the installation of *public-occupancy temporary structures* shall be manufactured of durable materials necessary to withstand environmental conditions at the service location. Components damaged during transportation or installation and due to the effects of weathering shall be replaced or repaired.~~

~~A qualified person shall inspect *public-occupancy temporary structures*, including components, when purchased or acquired and at least once per year, based on the requirements in ANSI E1.21. Inspection records shall be kept and shall be made available for verification by the *building official*. Additionally, *public-occupancy temporary structures* shall be inspected at regular intervals when in service to ensure that the structure continues to perform as designed and initially erected.~~

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>3103.6 Serviceability. The effects of structural loads or conditions shall not adversely affect the serviceability or performance of the <u>public- occupancy temporary structure.</u></p> <p>3103.7 Controlled occupancy procedures. Public-occupancy temporary structures that comply with Section 3103.5 for structural requirements do not require monitoring for controlled occupancy. <u>Public-occupancy temporary structures that employ exceptions for reduced environmental loads shall employ controlled-occupancy procedures as specified in Section 3103.5.1 , the procedures shall comply with this section and in accordance with ANSI ES1.7. An operations management plan conforming to in accordance with ANSI E1.21 with an occupant evacuation plan shall be submitted to the <i>Building Official</i> for approval as a part of the permit documents. In addition, the operations management plan shall include an emergency action plan that documents the following information, where applicable:</u></p> <ol style="list-style-type: none"> <u>1. Surfaces on which snow or ice accumulates shall be monitored before and during occupancy of the public-occupancy temporary structure. Any loads in excess of the design snow or ice load shall be removed prior to its occupancy, or the public- occupancy temporary structure shall be vacated in the event that either the design snow or ice load is exceeded during its occupancy.</u> <u>2. Wind speeds associated with the design wind loads shall be monitored before and during occupancy of the public-occupancy temporary structure. The public-occupancy temporary structure shall be vacated in the event that the design wind speed is expected to be exceeded during its occupancy.</u> <u>3. Criteria for initiating occupant evacuation procedures for flood and tsunami events.</u> <u>4. Occupant evacuation procedures shall be specified for each environmental hazard where the occupant management plan specifies the public-occupancy temporary structure is to be evacuated.</u> <u>5. Procedures for anchoring or removal of the public-occupancy temporary structure, or other additional measures or procedures to be implemented to mitigate hazards in snow, wind, flood, ice, or tsunami events.</u> 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	3103.7.1 Wind. Wind speeds associated with the design wind loads shall be monitored before and during occupancy of the public occupancy temporary structure. The public occupancy temporary structure shall be vacated in the event that the design wind speed is expected to be exceeded during its occupancy.					
S117-22	<p>Delete without substitution: [BS] SUSCEPTIBLE BAY. A roof or portion thereof with either of the following:</p> <ol style="list-style-type: none"> 1. A slope less than 1/4 inch per foot (0.0208 rad). 2. On which water is impounded, in whole or in part, and the secondary drainage system is functional but the primary drainage system is blocked. <p>A roof surface with a slope of $\frac{3}{4}$ inch per foot (0.0208 rad) or greater towards points of free drainage is not a susceptible bay.</p> <p>Revise as follows: 1608.3 Ponding instability. Susceptible bays of roofs shall be evaluated for ponding. Ponding instability on roofs shall be evaluated in accordance with Chapters 7 and 8 of ASCE 7. 1611.2 Ponding instability. Susceptible bays of roofs shall be evaluated for ponding. Ponding instability on roofs shall be evaluated in accordance with Chapters 7 and 8 of ASCE 7.</p>		X			Editorial.
S119-22 Part I	<p>Delete without substitution: 1609.2.2 Application of ASTM E1996. The text of Section 6.2.2 of ASTM E1996 shall be substituted as follows:</p> <p>6.2.2 Unless otherwise specified, select the wind zone based on the basic design wind speed, V, as follows:</p> <p>6.2.2.1 Wind Zone 1—130 mph \leq basic design wind speed, $V < 140$ mph.</p> <p>6.2.2.2 Wind Zone 2—140 mph \leq basic design wind speed, $V < 150$ mph at greater than one mile (1.6 km) from the coastline. The coastline shall be measured from the mean high water mark.</p> <p>6.2.2.3 Wind Zone 3—150 mph (67 m/s) \leq basic design wind speed, $V \leq 160$ mph (72 m/s), or 140 mph (63 m/s) \leq basic design wind speed, $V \leq 160$ mph (72 m/s) and within one mile (1.6 km) of the coastline. The coastline shall be measured from the mean high water mark.</p> <p>6.2.2.4 Wind Zone 4—basic design wind speed, $V > 160$ mph (72 m/s).</p> <p>Revise as follows:</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	1609.2.3 1609.2.2 Garage doors. Garage door glazed opening protection for windborne debris shall meet the requirements of an <i>approved</i> impact-resisting standard or ANSI/DASMA 115.					
S119-22 Part II	<p>Delete without substitution:</p> <p>R301.2.1.2.1 Application of ASTM E1996. The text of Section 2.2 of ASTM E1996 shall be substituted as follows:</p> <p>2.2 ASCE Standard:</p> <p>ASCE 7-10 American Society of Civil Engineers <i>Minimum Design Loads for Buildings and Other Structures</i></p> <p>The text of Section 6.2.2 of ASTM E1996 shall be substituted as follows:</p> <p>6.2.2 — Unless otherwise specified, select the wind zone based on the ultimate design wind speed, V_{ult}, as follows:</p> <p>6.2.2.1 — Wind Zone 1 — $130 \text{ mph} \leq \text{ultimate design wind speed, } V_{ult} < 140 \text{ mph.}$</p> <p>6.2.2.2 — Wind Zone 2 — $140 \text{ mph} \leq \text{ultimate design wind speed, } V_{ult} < 150 \text{ mph}$ at greater than 1 mile (1.6 km) from the coastline. The coastline shall be measured from the mean high water mark.</p> <p>6.2.2.3 — Wind Zone 3 — $150 \text{ mph (67 m/s)} \leq \text{ultimate design wind speed, } V_{ult} \leq 170 \text{ mph (76 m/s),}$ or $140 \text{ mph (54 m/s)} \leq \text{ultimate design wind speed, } V_{ult} \leq 170 \text{ mph (76 m/s)}$ and within 1 mile (1.6 km) of the coastline. The coastline shall be measured from the mean high water mark.</p> <p>6.2.2.4 — Wind Zone 4 — ultimate design wind speed, $V_{ult} > 170 \text{ mph (76 m/s).}$</p>		X			Clarification.
S121-22	<p>Revise as follows:</p> <p>1609.5.3 Rigid tile. Wind loads <u>The aerodynamic uplift moment for</u> on rigid tile roof coverings shall be determined in accordance with the following equation:</p> $M_a = q_h K_d C_L b L L_a [1.0 - (GC_p)]$ <p>For SI:</p> $M_a = q_h K_d C_L b L L_a [1.0 - (GC_p)] / 1,000$ <p>where:</p> <p>b = Exposed width, feet (mm) of the roof tile.</p> <p>C_L = Lift coefficient. The lift coefficient for concrete and clay tile shall be 0.2 or shall be determined by test in accordance with Section 1504.3.1.</p>		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>(GC_p) = Roof pressure coefficient for each applicable roof zone determined from Chapter 30 of ASCE 7. Roof coefficients shall not be adjusted for internal pressure.</p> <p>K_d = Wind directionality factor determined from Chapter 26 of ASCE 7.</p> <p>L = Length, feet (mm) of the roof tile.</p> <p>L_a = Moment arm, feet (mm) from the axis of rotation to the point of uplift on the roof tile. The point of uplift shall be taken at 0.76L from the head of the tile and the middle of the exposed width. For roof tiles with nails or screws (with or without a tail clip), the axis of rotation shall be taken as the head of the tile for direct deck application or as the top edge of the batten for battened applications. For roof tiles fastened only by a nail or screw along the side of the tile, the axis of rotation shall be determined by testing. For roof tiles installed with battens and fastened only by a clip near the tail of the tile, the moment arm shall be determined about the top edge of the batten with consideration given for the point of rotation of the tiles based on straight bond or broken bond and the tile profile.</p> <p>M_o = Aerodynamic uplift moment, feet-pounds (N-mm) acting to raise the tail of the tile.</p> <p>q_h = Wind velocity pressure, psf (kN/m²) determined from Section 26.10.2 of ASCE 7.</p> <p>Concrete and clay roof tiles complying with the following limitations shall be designed to withstand the aerodynamic uplift moment as determined by this section.</p> <ol style="list-style-type: none"> 1. The roof tiles shall be either loose laid on battens, mechanically fastened, <i>mortar</i> set or adhesive set. 2. The roof tiles shall be installed on solid sheathing that has been designed as components and cladding. 3. An <i>underlayment</i> shall be installed in accordance with Chapter 15. 4. The tile shall be single lapped interlocking with a minimum head lap of not less than 2 inches (51 mm). 5. The length of the tile shall be between 1.0 and 1.75 feet (305 mm and 533 mm). 1. The exposed width of the tile shall be between 0.67 and 1.25 feet (204 mm and 381 mm). 2. The maximum thickness of the tail of the tile shall not exceed 1.3 inches (33 mm). 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	3. Roof tiles using mortar set or adhesive set systems shall have not less than two-thirds of the tile's area free of mortar or adhesive contact.					
S122-22	<p>Add new text as follows: 1609.6 Elevators, Escalators, and other Conveying Systems. <u>Elevators, escalators, and other conveying systems and their components exposed to outdoor environments shall satisfy the wind design requirements of ASCE 7.</u></p> <p>Revise as follows: 1612.2 Design and construction. The design and construction of buildings and structures located in <i>flood hazard areas</i>, including <i>coastal high hazard areas</i> and <i>coastal A zones</i>, shall be in accordance with Chapter 5 of ASCE 7 and ASCE 24. <u>Elevators, escalators, conveying systems and their components shall conform to ASCE 24 and ASME A17.1/CSA B44 as applicable.</u></p> <p>Add new text as follows: 1613.4 Elevators, Escalators, and other Conveying Systems. <u>Elevators, escalators, and other conveying systems and their components shall satisfy the seismic requirements of ASCE 7 and ASME A17.1/CSA B44 as applicable.</u></p> <p>Revise as follows: 3001.3 Referenced standards. Except as otherwise provided for in this code, tThe design, construction, installation, alteration, repair and maintenance of elevators and conveying systems and their components shall conform to the applicable standard specified in Table 3001.3 and <u>Section 3001.6.</u> ASCE 24 for construction in <i>flood hazard areas</i> established in Section 1612.3.</p> <p>Add new text as follows: 3001.6 Structural Design. <u>All interior and exterior elevators, escalators, and other conveying systems and their components shall comply with all applicable design loading criteria in Chapter 16, including wind, flood, and seismic loads established in Sections 1609, 1612, and 1613.</u></p>		X			Clarification.
S123-22	<p>Revise as follows: 1610.1 Lateral pressures. Foundation walls and retaining walls <u>Structures below grade</u> shall be designed to resist lateral soil <i>loads</i> from adjacent soil. Soil <i>loads</i> specified in Table 1610.1 shall be used as the minimum design lateral soil <i>loads</i> unless determined otherwise by a geotechnical investigation in accordance with Section 1803. Foundation walls and other walls</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>in which horizontal movement is restricted at the top shall be designed for at-rest pressure. Retaining walls Walls that are free to move and rotate at the top, such as retaining walls, shall be permitted to be designed for active pressure.</p> <p>Where applicable, lateral lateral pressure from fixed or moving surcharge loads shall be added to the lateral soil load. Lateral pressure shall be increased if expansive soils are present at the site. Foundation walls shall be designed to support the weight of the full hydrostatic pressure of undrained backfill unless a drainage system is installed in accordance with Sections 1805.4.2 and 1805.4.3.</p> <p>Exception: Foundation walls extending not more than 8 feet (2438 mm) below grade and laterally supported at the top by flexible <i>diaphragms</i> shall be permitted to be designed for active pressure.</p>					
S124-22	<p>Revise as follows:</p> <p>1603.1.9 Roof rain load data. Design rainfall Rain intensity, <i>i</i> (in/hr) (cm/hr), and roof drain, scupper and overflow locations shall be shown regardless of whether rain loads govern the design.</p> <p>1611.1 Design rain loads. Each portion of a roof shall be designed to sustain the load of rainwater as per the requirements of Chapter 8 of ASCE 7. <u>Rain loads shall be based on the summation of the static head, d_s, hydraulic head, d_h, and ponding head, d_p, using Eqn. 16-19.</u></p> <p><u>The hydraulic head shall be based on hydraulic test data or hydraulic calculations assuming a flow rate corresponding to a rainfall intensity equal to or greater than the 15-min duration storm with return period given in Table 1611.1. Rainfall intensity shall be determined in inches per hour for 15 minute duration storms for Risk Category given in Table 1611.1. The design rainfall shall be based on the 100-year 15-minute duration event, or on other rainfall rates determined from approved local weather data. Alternatively, a design rainfall of twice the 100-year hourly rainfall rate indicated in Figures 1611.1(1) through 1611.1(5) shall be permitted. The ponding head shall be based on structural analysis as the depth of water due to deflections of the roof subjected to unfactored rain load and unfactored dead load.</u></p> <p>$R = 5.2 (d_s + d_h + d_p)$ For SI: $R = 0.0098(d_s + d_h + d_p)$ where:</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>d_h = <u>hydraulic head equal to the depth of water on the undeflected roof above the inlet of the secondary drainage system for structural loading (SDSL) required to achieve the design flow in in. (mm)</u> Additional depth of water on the undeflected roof above the inlet of secondary drainage system at its design flow (in other words, the hydraulic head), in inches (mm).</p> <p>d_s = <u>static head equal to the depth of water on the undeflected roof up to the inlet of the secondary drainage system for structural loading (SDSL) in in. (mm)</u> Depth of water on the undeflected roof up to the inlet of secondary drainage system when the primary drainage system is blocked (in other words, the static head), in inches (mm).</p> <p>d_p = <u>ponding head equal to the depth of water due to deflections of the roof subjected to unfactored rain load and unfactored dead load, in in. (mm)</u></p> <p>R = Rain load on the undeflected roof, in psf (kN/m²). Where the phrase “undeflected roof” is used, deflections from loads (including dead loads) shall not be considered when determining the amount of rain on the roof.</p> <p>SDSL is the roof drainage system through which water is drained from the roof when the drainage systems listed in ASCE 7 Section 8.2 (a) through (d) are blocked or not working.</p> <p>FIGURE 1611.1(1) 100 YEAR, 1 HOUR RAINFALL (INCHES) WESTERN UNITED STATES</p> <p>FIGURE 1611.1(2) 100 YEAR, 1 HOUR RAINFALL (INCHES) CENTRAL UNITED STATES</p> <p>FIGURE 1611.1(3) 100 YEAR, 1 HOUR RAINFALL (INCHES) EASTERN UNITED STATES</p> <p>FIGURE 1611.1(4) 100 YEAR, 1 HOUR RAINFALL (INCHES) ALASKA</p> <p>FIGURE 1611.1(5) 100 YEAR, 1 HOUR RAINFALL (INCHES) HAWAII</p> <p>1611.2 Ponding instability. <i>Susceptible bays</i> of roofs shall be evaluated for ponding instability in accordance with Chapters 7 and 8 of ASCE 7.</p> <p>1611.3 Controlled drainage. Roofs equipped with hardware to control the rate of drainage shall be equipped with a secondary drainage system at a higher elevation that limits accumulation of water on the roof above that elevation. Such roofs shall be designed to sustain the <i>load</i> of rainwater that will accumulate on them to the elevation of the secondary drainage system plus the uniform <i>load</i> caused by water that rises above the inlet of the secondary drainage system at its design flow determined from Section 1611.1. Such roofs shall be checked for ponding instability in accordance with Section 1611.2.</p>					
S125-22 Part I	<p>Revise as follows:</p> <p>[A] 110.3.12.1 Flood hazard documentation. If located in a <i>flood hazard area</i>, documentation of the elevation of the <i>lowest floor</i> or the elevation of dry floodproofing, if applicable,</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>as required in Section 1612.4 shall be submitted to the <i>building official</i> prior to the final inspection.</p> <p>1612.4 Flood hazard documentation. The following documentation shall be prepared and sealed by a <i>registered design professional</i> and submitted to the <i>building official</i>:</p> <ol style="list-style-type: none"> 1. For construction in <i>flood hazard areas</i> other than <i>coastal high hazard areas</i> or <i>coastal A zones</i>: <ol style="list-style-type: none"> 1.1. The elevation of the <i>lowest floor</i>, including the basement, as required by the lowest floor elevation inspection in Section 110.3.3 and for the final inspection in Section 110.3.12.1. 1.2. For fully enclosed areas below the <i>design flood elevation</i> where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.7.2.1 of ASCE 24, <i>construction documents</i> shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.7.2.2 of ASCE 24. 1.3. For <i>dry floodproofed</i> nonresidential buildings, <i>construction documents</i> shall include a statement that the <i>dry floodproofing</i> is designed in accordance with ASCE 24 and shall include the flood emergency plan specified in Chapter 6 of ASCE 24. 1.4. <u>For dry floodproofed nonresidential buildings, the elevation to which the building is dry floodproofed as required for the final inspection in Section 110.3.12.1.</u> 2. For construction in <i>coastal high hazard areas</i> and <i>coastal A zones</i>: <ol style="list-style-type: none"> 2.1. The elevation of the bottom of the lowest horizontal structural member as required by the <i>lowest floor</i> elevation inspection in Section 110.3.3 and for the final inspection in Section 110.3.12.1. 2.2. <i>Construction documents</i> shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and <i>flood loads</i> acting simultaneously on all building 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>components, and other <i>load</i> requirements of Chapter 16.</p> <p>2.3. For breakaway walls designed to have a resistance of more than 20 psf (0.96 kN/m²) determined using <i>allowable stress design</i>, <i>construction documents</i> shall include a statement that the breakaway wall is designed in accordance with ASCE 24.</p> <p>2.4 For breakaway walls where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.7.2.1 of ASCE 24, <i>construction documents</i> shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.7.2.2 of ASCE 24.</p>					
S125-22 Part II	<p>Revise as follows: [A] 109.3.10 Flood hazard documentation. Where a building is located in a <i>flood hazard area</i>, documentation of the elevation of the lowest floor <u>or the elevation of dry floodproofing, if applicable</u>, as required in the International Building Code or the International Residential Code, as applicable, shall be submitted to the <i>code official</i> prior to the final inspection.</p>		X			Clarification.
S126-22	<p>Revise as follows: 1612.4 Flood hazard documentation. The following documentation shall be prepared and sealed by a <i>registered design professional</i> and submitted to the <i>building official</i>:</p> <p>1. For construction in <i>flood hazard areas</i> other than <i>coastal high hazard areas</i> or <i>coastal A zones</i>:</p> <p>1.1</p> <p>2. For construction in coastal high hazard areas and coastal A zones:</p> <p>2.1</p> <p>2.2</p> <p>2.3. For breakaway walls designed to have a resistance of more than 20 psf (0.96 kN/m²) determined using allowable stress design <u>or a resistance to an ultimate load of more than 33 psf (1.58 kN/m²)</u>, <i>construction documents</i> shall include a statement that the breakaway wall is designed in accordance with ASCE 24.</p> <p>2.4</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S132-22	<p>Revise as follows: 1613.3 Ballasted photovoltaic panel systems. Ballasted, roof-mounted <i>photovoltaic (PV) panel systems</i> need not be rigidly attached to the roof or supporting structure. Ballasted non-penetrating systems <u>Ballasted, unattached PV panel systems</u> shall be designed and installed only on roofs with slopes not more than one unit vertical in 12 units horizontal. Ballasted nonpenetrating systems <u>Ballasted, unattached PV panel systems</u> shall be designed to accommodate resist sliding and uplift using design methods and associated criteria from in accordance with ASCE 7 Chapter 13. resulting from lateral and vertical forces as required by Section 1605, using a coefficient of friction determined by acceptable engineering principles. In structures assigned to Seismic Design Category C, D, E or F, ballasted nonpenetrating systems shall be designed to accommodate seismic displacement determined by nonlinear response history or other approved analysis or shake table testing, using input motions consistent with ASCE 7 lateral and vertical seismic forces for nonstructural components on roofs.</p>		X			Simplification.
S141-22	<p>Add new text as follows: 1705.2.2 Structural Stainless Steel. <u>Special inspections and nondestructive testing of structural stainless steel elements in buildings and portions thereof shall be in accordance with the quality assurance inspection requirements of AISC 370.</u> Add new standard(s) as follows: <u>ANSI/AISC 370-21 Specification for Structural Stainless Steel Buildings</u></p>		X			Clarification
S142-22	<p>Add new text as follows: 1705.2.5 Metal building systems. <u>Special inspections of metal building systems shall be performed in accordance with Sections 1705.2.1, 1705.2.2, 1705.2.3, and 1705.2.4, and in accordance with Table 1705.2.5. The approved agency shall perform inspections of the erected metal building system to verify compliance with the approved construction documents.</u> Add new definition as follows:</p>			X	Minimal.	Requires special inspection.

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		Decrease	Neutral	Increase		

Sub Code:

Table 1705.2.5 SPECIAL INSPECTIONS OF METAL BUILDING SYSTEMS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. Installation of rafter / beam flange braces and column flange braces.	---	X
2. Installation of purlins and girts, including specified lapping.	---	X
3. Purlin and girt restraint / bridging / bracing.	---	X
4. Installation of X-bracing, tightened to remove any sag including proper tightening of X-bracing.	---	X

S143-22

Revise as follows:
TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION
 Portions of table not shown remain unchanged.

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
2. Reinforcing bar welding:			AWS D1.4	---
a) Verify weldability of reinforcing bars other than ASTM A706.	X	-	ACI 318, 26.6.4	
b) Inspect welding of reinforcement for special moment frames, boundary elements of special structural walls, and coupling beams.	X	-	26.13.3	
c) Inspect welded reinforcement splices, and	-	-		
d) Inspect single-pass fillet welds, maximum ⁵ / ₁₆ " and	X	-		
e) Inspect all other welds.	-	X		

X

Minimal.

Coordinates the special inspection provisions for welding of reinforcing steel.

S144-22

Revise as follows:
1705.4 Masonry construction. *Special inspections* and tests of masonry construction shall be performed in accordance with the quality assurance program requirements of TMS 402 and TMS 602.
Exception: *Special inspections* and tests shall not be required for:
 1. Glass unit masonry or masonry veneer designed in accordance with Section 2110 or Chapter 14, Empirically designed masonry, glass unit masonry or masonry veneer designed in accordance with Section 2109, Section 2110 or Chapter 14, respectively, where they are part of a structure classified as Risk Category I, II or III.
 2. Masonry foundation walls constructed in accordance with Table 1807.1.6.3(1), 1807.1.6.3(2), 1807.1.6.3(3) or 1807.1.6.3(4).
 3. Masonry fireplaces, masonry heaters or masonry chimneys installed or constructed in accordance with Section 2111, 2112 or 2113, respectively.
2109.1 General. Empirically designed adobe masonry shall conform to the requirements of Appendix A of TMS 402-16, except where otherwise noted in this section.
2109.1.1 Limitations. The use of empirical design of adobe masonry shall be limited as noted in Section A.1.2 of TMS 402-16. In buildings that exceed one or more of the limitations of Section

X

Editorial.

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		Decrease	Neutral	Increase		
	<p>A.1.2 of TMS 402-16, masonry shall be designed in accordance with the engineered design provisions of Section 2101.2 or the foundation wall provisions of Section 1807.1.5.</p> <p>Section A.1.2.2 of TMS 402-16 shall be modified as follows:</p> <p>A.1.2.2 – <i>Wind</i>. Empirical requirements shall not apply to the design or construction of masonry for buildings, parts of buildings, or other structures to be located in areas where V_{asd} as determined in accordance with Section 1609.3.1 of the <i>International Building Code</i> exceeds 110 mph.</p> <p>2109.2 Adobe construction. <i>Adobe construction</i> shall comply with this section and shall be subject to the requirements of this code for Type V construction, Appendix A of TMS 402-16, and this section.</p>					
S147-22	<p>Revise as follows:</p> <p>1709.5 Exterior window and door assemblies. The design pressure rating of exterior windows and doors in buildings shall be determined in accordance with Section 1709.5.1 or 1709.5.2. For exterior windows and doors tested in accordance with Section 1709.5.1 or 1709.5.2, required design wind pressures determined from ASCE 7 shall be permitted to be converted to allowable stress design by multiplying by 0.6.</p> <p>Exception: Structural wind load design pressures for window or door assemblies other than the size tested in accordance with Section 1709.5.1 or 1709.5.2 shall be permitted to be different than the design value of the tested assembly, provided that such pressures are determined by accepted engineering analysis or validated by an additional test of the window or door assembly to the alternative allowable design pressure in accordance with Section 1709.5.2. Components of the alternate size assembly shall be the same as the tested or labeled assembly. Where engineering analysis is used, it shall be performed in accordance with the analysis procedures of AAMA 2502 or <u>WDMA I.S. 11</u>.</p> <p>Add new standard(s) as follows:</p> <p><u>WDMA I.S. 11-2018 Industry Standard for Voluntary Analytical Method for Design Pressure (DP) Ratings of Fenestration Products</u></p>		X			Provides additional design option.
S148-22	<p>Revise as follows:</p> <p>1803.5.1 Classification. Soil materials shall be classified in accordance with ASTM D2487. <u>Rock shall be classified in accordance with ASTM D5878.</u></p>		X			Adds rock classification standard.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>Add new standard(s) as follows: <u>D5878-19 Standard Guides for Using Rock-Mass Classification Systems for Engineering Purpose</u></p>					
S149-22	<p>Revise as follows: 1803.5.2 Questionable soil and rock. Where the classification, strength, <u>moisture sensitivity</u> or compressibility of the soil <u>or rock</u> is in doubt or where a load-bearing value superior to that specified in this code is claimed, the <i>building official</i> shall be permitted to require that a geotechnical investigation be conducted.</p>		X			Adds characteristic to criteria.
S151-22	<p>Revise as follows: 1803.5.3 Expansive soil. In areas likely to have expansive soil, the <i>building official</i> shall require soil tests to determine where such soils do exist. Soils meeting all four of the following provisions shall be considered to be expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted: 1. Plasticity index (PI) of 15 or greater, determined in accordance with ASTM D4318 2. More than 10 percent of the soil particles pass a No.200 sieve (75 µm), determined in accordance with ASTM D422-<u>D6913</u>. 3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D422-<u>D6913</u>. 4. Expansion index greater than 20, determined in accordance with ASTM D4829. Add new standard(s) as follows: <u>D6913/D6913M-17 Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis</u></p>		X			Editorial.
S152-22	<p>Revise as follows: 1803.5.4 Ground-water table Groundwater. A subsurface soil <u>geotechnical</u> investigation shall be performed to determine whether if: 1. the existing ground-water table <u>Groundwater</u> is above or within 5 feet (1524 mm) below the elevation of the <i>lowest floor</i> level where such floor is located below the finished ground level adjacent to the foundation; <u>and</u> 2. <u>the groundwater depth will affect the design and construction of buildings and structures.</u></p>		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>Exception: A subsurface soil investigation to determine the location of the ground-water table shall not be required where waterproofing is provided in accordance with Section 1805.</p>					
S153-22	<p>Revise as follows: 1803.5.6 Rock strata. Where subsurface explorations at the project site indicate variations in the structure of rock on which foundations are to be constructed <u>on or in rock</u>, a sufficient number of borings shall be drilled to sufficient depths to the <u>geotechnical investigation shall</u> assess the variations in rock strata <u>depth</u>, competency, of the rock and its load-bearing capacity.</p>		X			Clarification.
S155-22	<p>Revise as follows: 1806.2 Presumptive load-bearing values. The load-bearing values used in design for supporting soils <u>and rock</u> near the surface shall not exceed the values specified in Table 1806.2 unless data to substantiate the use of higher values are submitted and <i>approved</i>. Where the <i>building official</i> has reason to doubt the classification, strength or compressibility of the soil <u>or rock</u>, the requirements of Section 1803.5.2 shall be satisfied. Presumptive load-bearing values shall apply to materials with similar physical <u>and engineering</u> characteristics <u>and dispositions</u>. Mud Very soft to soft clay or silt (CL, CH, MH, ML), very loose to loose silt (ML), organic silt, and organic clays (OL, OH), peat (Pt) <u>or unprepared and undocumented</u> fill shall not be assumed to have a presumptive load-bearing capacity unless data to substantiate the use of such a value are submitted. Exception: A presumptive load-bearing capacity shall be permitted to be used where the <i>building official</i> deems the load-bearing capacity of mud, organic silt or unprepared fill is adequate for the support of lightweight or temporary structures.</p>		X	-		Editorial.
S157-22	<p>Add new text as follows: 1807.2.5 Guards at retaining walls. <u>Guards shall be provided at retaining walls in accordance with Sections 1807.2.5.1 through 1807.2.5.3.</u> Exception: <u>Guards are not required at retaining walls not accessible to the public.</u> 1807.2.5.1 Guards Where required. <u>At retaining walls located within 36 inches (914mm) of walking surfaces, a guard shall be required between the walking surface and the open side of the retaining wall where the walking surface is located along the top of a retaining wall located along</u></p>		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p><u>open-sided walking surfaces that are located more than 30 inches (762 mm) measured vertically to the surface or grade below at the exposed face of the retaining wall at any point within 36 inches (914mm) horizontally to the edge of the open side . Guards shall be adequate in strength and attachment in accordance comply with Section 1607.9.</u></p> <p><u>Exceptions:</u></p> <ol style="list-style-type: none"> Where other barrier(s) are provided that is approved by the <i>building official</i>. Where a retaining wall is located where it is not accessible to the public, as determine by the <i>building official</i>, a <i>guard</i> shall not be required. <p>1807.2.5.2 Height. Required <i>guards</i> at retaining walls shall comply with the height requirements of section 1015.3.</p> <p>1807.2.5.3 Opening limitations. Required <i>guards</i> shall comply with the opening limitations of Section 1015.4.</p>					
S158-22	<p>Revise as follows:</p> <p>1807.3 Embedded posts and poles. Designs to resist both axial and lateral <i>loads</i> employing posts or poles as columns embedded in earth or in concrete footings in earth shall be in accordance with Sections 1807.3.1 through 1807.3 <u>or in accordance with ASABE EP 486.3.</u></p>		X			Editorial.
S160-22	<p>Revise as follows:</p> <p>1807.3.2.2 Constrained. The following formula shall be used to determine the depth of embedment required to resist lateral <i>loads</i> where lateral constraint is provided at the ground surface, such as by a rigid floor or <u>slab-on-ground pavement. Hot mix asphaltic concrete shall not be considered a rigid pavement.</u></p> $d = \sqrt{\frac{4.25Ph}{S_3b}} \quad \text{(Equation 18-2)}$ <p>or alternatively</p> $d = \sqrt{\frac{4.25M_g}{S_3b}} \quad \text{(Equation 18-3)}$ <p>where: <i>M_g</i> = Moment in the post at grade, in foot-pounds (kN-m). <i>S₃</i> = Allowable lateral soil-bearing pressure as set forth in Section 1806.2 based on a depth equal to the depth of embedment in pounds per square foot (kPa).</p>			X	Minimal.	Clarification.
S163-22	<p>Revise as follows:</p> <p>1809.6 Location of footings. Footings on granular soil shall be so located that the line drawn between the lower edges of adjoining <u>adjacent</u> footings shall not have a slope steeper than 30 degrees (0.52 rad) with the horizontal, unless the material supporting the</p>		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	higher footing is braced or retained or otherwise laterally supported in an <i>approved</i> manner or a greater slope has been properly established by engineering analysis.					
S165-22	<p>Add new text as follows: 1809.14 Grade beams. <u>Grade beams shall comply with the provisions of ACI 318.</u> Exception: <u>Grade Beams not subject to differential settlement exceeding one-fourth of the thresholds specified in ASCE 7 Table 12.13- 3 and designed to resist the seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7 need not comply with ACI 318 Section 18.13.3.1.</u></p> <p>Revise as follows: 1810.3.12 Grade beams. Grade beams shall comply with the provisions of ACI 318. Exception: <u>Grade beams not subject to differential settlement exceeding one-fourth of the thresholds specified in ASCE 7 Table 12.13- 3 and designed to resist the seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7 need not comply with ACI 318 Section 18.13.3.1.</u></p>		X			Adds design option.
S166-22	<p>Revise as follows: 1810.2.2 Stability. <i>Deep foundation</i> elements shall be braced to provide lateral stability in all directions. Three or more elements connected by a rigid cap shall be considered to be braced, provided that the elements are located in radial directions from the centroid of the group not less than 60 degrees (1 rad) apart. A two-element group in a rigid cap shall be considered to be braced along the axis connecting the two elements. Methods used to brace <i>deep foundation</i> elements shall be subject to the approval of the <i>building official</i>. <i>Deep foundation</i> elements supporting walls shall be placed alternately in lines spaced not less than 1 foot (305 mm) apart and located symmetrically under the center of gravity of the wall load carried, unless effective measures are taken to provide for eccentricity and lateral forces, or the foundation elements are adequately braced to provide for lateral stability. Exceptions: 1. Isolated cast-in-place <i>deep foundation</i> elements without lateral bracing shall be permitted where the least horizontal dimension</p>	X			Cost of bracing is reduced.	Allows analysis to modify bracing requirements.

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		Decrease	Neutral	Increase		
	<p>is not less than 2 feet (610 mm), adequate lateral support in accordance with Section 1810.2.1 is provided for the entire height and <u>analysis demonstrates that the element can support the required loads, including mislocations required by Section 1810.3.1.3, with neither harmful distortion nor instability in the structure the height does not exceed 12 times the least horizontal dimension.</u></p> <p>2. A single row of <i>deep foundation</i> elements without lateral bracing is permitted for one- and two-family dwellings and lightweight construction not exceeding two <i>stories above grade plane</i> or 35 feet (10 668 mm) <i>inbuilding height</i>, provided that the centers of the elements are located within the width of the supported wall.</p>					
S167-22	<p>Revise as follows:</p> <p>1810.3.2.8 Justification of higher allowable stresses. Use of allowable stresses greater than those specified in Section in Table 1810.3.2.6 that must be justified in accordance with this section shall be permitted where supporting data justifying such higher stresses is filed with submitted to and approved by the building official. Such substantiating data shall include the following:</p> <ol style="list-style-type: none"> 1. A geotechnical investigation in accordance with Section 1803. 2. Load tests in accordance with Section 1810.3.3.1.2, regardless of the load supported by the element. <p>The design and installation of the deep foundation elements shall be under the direct supervision of a <i>registered design professional</i> knowledgeable in the field of soil mechanics and deep foundations who shall submit a report to the <i>building official</i> stating that the elements as installed satisfy the design criteria.</p>		X			Clarification.
S168-22	<p>1810.3.3.2 Allowable lateral load. Where required by the design, the lateral load capacity of a single <i>deep foundation</i> element or a group thereof shall be determined by an <i>approved</i> method of analysis or by <u>lateral</u> load tests to not less than twice the proposed design working <i>load</i>. The resulting allowable lateral <i>load</i> shall not be more than one-half of the <i>load</i> that produces a gross lateral movement of 1 inch (25 mm) at the lower of the top of <u>the</u> foundation element and the ground surface, unless it can be shown that the predicted lateral movement shall cause neither harmful distortion of, nor instability in, the structure, nor cause any element to be loaded beyond its capacity. <u>When piles</u></p>		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	are used in groups, group Group effects shall be evaluated in accordance with where required by Section 1810.2.5.					
S172-22	<p>Revise as follows:</p> <p>1810.4.5 Vibratory driving. Vibratory drivers shall only be used to install <i>deep foundation</i> elements where the element load capacity is verified by load tests in accordance with Section 1810.3.3.1.2. The installation of production elements shall be controlled according to power consumption, rate of penetration or other <i>approved</i> means that ensure element capacities equal or exceed those of the test elements.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> The pile installation is completed by driving with an impact hammer in accordance with Section 1810.3.3.1.1. The pile is to be used only for lateral resistance. <p><u>The installation of production elements shall be controlled according to power consumption, rate of penetration or other <i>approved</i> means that ensure element capacities equal or exceed those of the test elements.</u></p>		X			Clarification.
S173-22	<p>Revise as follows:</p> <p>1901.2 Plain and reinforced concrete. Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code. Except for the provisions of Sections 1904 and 1907, the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical <i>loads</i> or lateral forces from other parts of the structure to the soil.</p> <p align="center">SECTION 1907</p> <p align="center"><u>MINIMUM SLAB PROVISIONS SLABS-ON-GROUND</u></p> <p>Add new text as follows:</p> <p>1907.1 General Structural slab on ground. Non-structural slabs-on-ground shall comply with Section 1904 and this Section. <u>Structural concrete slabs-on-ground shall comply with all applicable provisions of this Chapter. Slabs-on-ground shall be considered structural concrete where required by ACI 318 or where designed to one of the following:</u></p> <ol style="list-style-type: none"> <u>Transmit vertical loads or resist lateral forces from other parts of the structure to the soil.</u> <u>Transmit vertical loads or resist lateral forces from other parts of the structure to foundations</u> Serve as tributary area for resisting uplift or overturning forces. 		X			Clarification.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1907.2 Non-structural slabs on ground. Non-structural slabs-on-ground shall only be required to comply with Sections 1904.2, 1907.3, and 1907.4. Portions of the non-structural slabs on ground used to resist uplift forces or overturning shall be designed in accordance with accepted engineering practice throughout the entire portion designated as dead load to resist uplift forces or overturning.</p> <p>1907.3 Thickness. The thickness of concrete floor slabs supported directly on the ground shall be not less than 3½ inches (89 mm).</p> <p>Revise as follows:</p> <p>1907.1 1907.4 General Vapor retarder. The thickness of concrete floor slabs supported directly on the ground shall be not less than 3¼ inches (89 mm). A 6-mil (0.006 inch; 0.15 mm) polyethylene vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the base course or subgrade and the concrete floor slab, or other <i>approved</i> equivalent methods or materials shall be used to retard vapor transmission through the floor slab.</p> <p>Exception: A vapor retarder is not required:</p> <ol style="list-style-type: none"> 1. For detached structures accessory to occupancies in Group R-3, such as garages, utility buildings or other unheated facilities. 2. For unheated storage rooms having an area of less than 70 square feet (6.5 m²) and carports attached to occupancies in Group R-3. 3. For buildings of other occupancies where migration of moisture through the slab from below will not be detrimental to the intended occupancy of the building. 4. For driveways, walks, patios and other flatwork that will not be enclosed at a later date. 5. Where <i>approved</i> based on local site conditions. 					
S181-22	<p>Revise as follows:</p> <p>2102.1 General. The following notations are used in the chapter: NOTATIONS.</p> <p>Portions of not shown remain unchanged.</p>		X			Editorial.

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE											
		Decrease	Neutral	Increase													
Sub Code:																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">f'_{AAC}</td> <td style="width: 5%;">=</td> <td>Specified compressive strength of AAC masonry, the minimum compressive strength for a class of AAC masonry as specified in TMS 602, psi (MPa).</td> </tr> <tr> <td>f'_m</td> <td>=</td> <td>Specified compressive strength of masonry at age of 28 days, psi (MPa).</td> </tr> <tr> <td>f'_{mi}</td> <td>=</td> <td>Specified compressive strength of masonry at the time of prestress transfer, psi (MPa).</td> </tr> <tr> <td>K</td> <td>=</td> <td>The lesser of the masonry cover, clear spacing between adjacent reinforcement, or five times d_b, inches (mm).</td> </tr> </table> <p>2107.2.1 Lap splices. The minimum length of lap splices for reinforcing bars in tension or compression, l_d, shall be: $l_d = 0.002d_b f_s$ For SI: $l_d = 0.29d_b f_s$ but not less than 12 inches (305 mm). The length of the lapped splice shall be not less than 40 bar diameters. where : d_b = Diameter of reinforcement, inches (mm). f_s = Computed stress in reinforcement due to design loads, psi (MPa). In regions of moment where the design tensile stresses in the reinforcement are greater than 80 percent of the allowable steel tension stress, F_s, the lap length of splices shall be increased not less than 50 percent of the minimum required length, but need not be greater than 72 d_b. Other equivalent means of stress transfer to accomplish the same 50 percent increase shall be permitted. Where epoxy coated bars are used, lap length shall be increased by 50 percent.</p> <p>2109.2.1.2.4 Modulus of rupture determination. The modulus of rupture shall be determined by the equation: $f_r = 3 PL_s / [2 S_w (S_t^2)]$ (Equation 21-2) Where for the purpose of this section only: S_w = Width of the test specimen measured parallel to the loading cylinder, inches (mm). f_r = Modulus of rupture, psi (MPa). L_s = Distance between supports, inches (mm). S_t = Thickness of the test specimen measured parallel to the direction of load, inches (mm). P = The applied load at failure, pounds (N).</p>	f'_{AAC}	=	Specified compressive strength of AAC masonry, the minimum compressive strength for a class of AAC masonry as specified in TMS 602, psi (MPa).	f'_m	=	Specified compressive strength of masonry at age of 28 days, psi (MPa).	f'_{mi}	=	Specified compressive strength of masonry at the time of prestress transfer, psi (MPa).	K	=	The lesser of the masonry cover, clear spacing between adjacent reinforcement, or five times d_b , inches (mm).				
f'_{AAC}	=	Specified compressive strength of AAC masonry, the minimum compressive strength for a class of AAC masonry as specified in TMS 602, psi (MPa).															
f'_m	=	Specified compressive strength of masonry at age of 28 days, psi (MPa).															
f'_{mi}	=	Specified compressive strength of masonry at the time of prestress transfer, psi (MPa).															
K	=	The lesser of the masonry cover, clear spacing between adjacent reinforcement, or five times d_b , inches (mm).															
S182-22	<p>2103.2.4 Mortar for adhered masonry veneer. Mortar for use with adhered masonry veneer shall conform to Section 13.3 of TMS 402. ASTM C270 for Type N or S, or shall comply with ANSI A118.4 for latex modified Portland cement mortar.</p>		X			Updates mortar requirements.											

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CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S183-22	<p>Revise as follows:</p> <p>2107.2 TMS 402, Section 61616.1.7.1, lap splices. As an alternative to Section 6.1.6.1.16.1.7.1, it shall be permitted to design lap splices in accordance with Section 2107.2.1.</p> <p>2107.2.1 Lap splices. The minimum length of lap splices for reinforcing bars in tension or compression, l_d, shall be:</p> $l_d = 0.002d_b f_s$ <p>For SI: $l_d = 0.29d_b f_s$ but not less than 12 inches (305 mm). The length of the lapped splice shall be not less than 40 bar diameters. where :</p> <p>d_b = Diameter of reinforcement, inches (mm)- f_s = Computed stress in reinforcement due to design loads, psi (MPa).</p> <p>In regions of moment where the design tensile stresses in the reinforcement are greater than 80 percent of the allowable steel tension stress, F_s, the lap length of splices shall be increased not less than 50 percent of the minimum required length, but need not be greater than 72 d_b. Other equivalent means of stress transfer to accomplish the same 50 percent increase shall be permitted. Where epoxy coated bars are used, lap length shall be increased by 50 percent.</p> <p>2107.3 TMS 402, Section 61616.1.7, splices of reinforcement. <u>Add to Modify</u> Section 6.1.6.16.1.7 as follows: 6.1.6.1 6.1.7 Splices of reinforcement. Lap splices, welded splices or mechanical splices are permitted in accordance with the provisions of this section. Welding shall conform to AWS D1.4. Welded splices shall be of ASTM A706 steel reinforcement. Reinforcement larger than No. 9 (M #29) shall be spliced using mechanical connections in accordance with Section 6.1.6.1.3 6.1.7.2.</p> <p>2108.2 TMS 402, Section 615116.1.6, development. <u>Modify Add</u> a the second paragraph of Section 6.1.6.3.16.1.5.1.1 as follows: The required development length of reinforcement shall be determined by Equation (6-1), but shall be not less than 12 inches (305 mm) and need not be greater than 72d_b.</p> <p>2108.3 TMS 402, Section 61611, splices. <u>Modify Add</u> to Sections 6.1.6.1.2 and 6.1.6.1.3 6.1.7.2.1 and 6.1.7.3.1 as follows: 6.1.6.1.2 6.1.7.3.1 – A welded splice shall have the bars butted and welded to develop not less than 125 percent of the yield</p>		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>strength, f_y, of the bar in tension or compression, as required. Welded splices shall be of ASTM A706 steel reinforcement. Welded splices shall not be permitted in plastic hinge zones of intermediate or special reinforced walls.</p> <ul style="list-style-type: none"> • 6.1.6.1.36.1.7.2.1 – Mechanical splices shall be classified as Type 1 or 2 in accordance with Section 18.2.7.1 of ACI 318. Type 1 mechanical splices shall not be used within a plastic hinge zone or within a beam-column joint of intermediate or special <i>reinforced masonry</i> shear walls. Type 2 mechanical splices are permitted in any location within a member. 					
S185-22	<p>Revise as follows:</p> <p>2109.1.1 Limitations. The use of empirical design of adobe masonry shall be limited as noted in Section A.1.2 of TMS 402. In buildings that exceed one or more of the limitations of Section A.1.2 of TMS 402, masonry shall be designed in accordance with the engineered design provisions of Section 2101.2 or the foundation wall provisions of Section 1807.1.5.</p> <p>Section A.1.2.2 <u>A.1.2.3</u> of TMS 402 shall be modified as follows: A.1.2.2 <u>A.1.2.3</u> – <i>Wind</i>. Empirical requirements shall not apply to the design or construction of masonry for buildings, parts of buildings, or other structures to be located in areas where V_{asd} as determined in accordance with Section 1609.3.1 of the <i>International Building Code</i> exceeds 110 mph.</p>		X			Editorial.
S189-22	<p>Revise as follows:</p> <p>2207.2 Design. The <i>registered design professional</i> shall indicate on the <i>construction documents</i> the <i>steel joist</i> and <i>steel joist girder</i> designations from the specifications listed in Section 2207.1; and shall indicate the requirements for joist and joist girder design, layout, end supports, anchorage, bridging design that differs from the SJI specifications listed in Section 2207.1, bridging termination connections and bearing connection design to resist uplift and lateral <i>loads</i>. These documents shall indicate special requirements as follows:</p> <ol style="list-style-type: none"> 1. Special <i>loads</i> including: <ol style="list-style-type: none"> 1.1. Concentrated <i>loads</i>. 1.2. Nonuniform <i>loads</i>. 1.3. Net uplift <i>loads</i>. 1.4. Axial <i>loads</i>. 1.5. End moments. 1.6. Connection forces. 		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>2. Special considerations including:</p> <p>2.1. Profiles for joist and joist girder configurations that differ from those defined by the SJI specifications listed in Section 2207.1.</p> <p>2.2. Oversized or other nonstandard web openings.</p> <p>2.3. Extended ends.</p> <p>3. Live and total load deflection Deflection criteria for joists and joist girder configurations that differ from those defined by the SJI specifications listed in Section 2207.1.</p> <p>2207.4 Steel joist drawings. <i>Steel joist</i> placement plans shall be provided to show the <i>steel joist</i> products as specified on the <i>approved construction documents</i> and are to be utilized for field installation in accordance with specific project requirements as stated in Section 2207.2. <i>Steel joist</i> placement plans shall include, at a minimum, the following:</p> <p>1. Listing of applicable <i>loads</i> as stated in Section 2207.2 and used in the design of the <i>steel joists</i> and joist girders as specified in the approved construction documents.</p> <p>2. Profiles for joist and joist girder configurations that differ from those defined by the SJI specifications listed in Section 2207.1.</p> <p>3. Connection requirements for:</p> <p>3.1. Joist supports.</p> <p>3.2. Joist girder supports.</p> <p>3.3. Field splices.</p> <p>3.4. Bridging attachments.</p> <p>4. Live and total load deflection Deflection criteria for joists and joist girder configurations that differ from those defined by the SJI specifications listed in Section 2207.1.</p> <p>5. Size, location and connections for bridging.</p> <p>6. Joist headers.</p> <p>Steel joist placement plans do not require the seal and signature of the joist manufacturer’s registered design professional.</p>					
S192-22	<p>Add new text as follows:</p> <p>2209.4 Material handling stairs, ladders and guards. <u>The design and installation of stairs, ladders and guarding serving material handling structures—steel storage racks and industrial steel work platforms used in material handling structures shall be in accordance with ANSI/MH 32.1.</u></p>	X			Minimal.	Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S194-22	<p>Revise as follows:</p> <p>2210.1.1 Steel decks. The design and construction of cold-formed steel floor and roof decks and composite slabs of concrete and steel deck shall be in accordance with this section <u>SDI-SD.</u></p> <p>Delete without substitution:</p> <p>2210.1.1.1 Noncomposite steel floor decks. Noncomposite steel floor decks shall be permitted to be designed and constructed in accordance with ANSI/SDI-NC1.0.</p> <p>2210.1.1.2 Steel roof deck. Steel roof decks shall be permitted to be designed and constructed in accordance with ANSI/SDI-RD1.0.</p> <p>2210.1.1.3 Composite slabs on steel decks. Composite slabs of concrete and steel deck shall be permitted to be designed and constructed in accordance with SDI-C.</p>		X			Editorial.
196-22	<p>Add new text as follows:</p> <p>2211.3 Cutting and notching, and boring. The cutting, notching and boring of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.</p>		X			Editorial.
S197-22	<p>Add new text as follows:</p> <p align="center">SECTION 2212 Metal Building Systems</p> <p>2212.1 General. The design, fabrication and erection of a metal building system shall be in accordance with the additional provisions of this section.</p> <p>2212.1.1 Design. The design of metal building systems shall be in accordance with Sections 2212.1.1.1 through 2212.1.1.4, as applicable.</p> <p>2212.1.1.1 Structural Steel. The design, fabrication and erection of structural steel shall be in accordance with Section 2205.</p> <p>2212.1.1.2 Cold-Formed Steel. The design of cold-formed carbon and low-alloy steel structural members shall be in accordance with Section 2210.</p> <p>2212.1.1.3 Steel Joists. The design of steel joists shall be in accordance with Section 2207.</p> <p>2212.1.1.4 Steel Cable. The design, fabrication and erection including related connections of steel cables shall be in accordance with Section 2208.</p>		X			Clarification.
S198-22	<p>Revise as follows:</p> <p>2103.1 Masonry units. Concrete masonry units, clay or shale masonry units, stone masonry units, glass unit masonry and AAC</p>		X			Editorial.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
		Sub Code:				
	<p>masonry units shall comply with Article 2.3 of TMS 602. Architectural cast stone shall conform to ASTM C1364 and TMS 504. Adhered manufactured stone masonry veneer units shall conform to ASTM C1670.</p> <p>Exception: Structural clay tile for nonstructural use in fireproofing of structural members and in wall furring shall not be required to meet the compressive strength specifications. The fire-resistance rating shall be determined in accordance with ASTM E119 or UL 263 and shall comply with the requirements of Table 705.5.</p>					
199-22	<p>Revise as follows:</p> <p>2301.2 Nominal Sizes Dimensions. For the purposes of this chapter, where dimensions of lumber are specified, they shall be deemed to be nominal dimensions unless specifically designated as actual dimensions (see Section 2304.2). <u>Where dimensions of cross-laminated timber thickness are specified, they shall be deemed to be actual dimensions.</u></p> <p>2304.11.3.1 Cross-laminated timber floors. Cross-laminated timber shall be not less than 4 inches (102 mm) in actual thickness. Cross-laminated timber shall be continuous from support to support and mechanically fastened to one another. Cross-laminated timber shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design. Corbelling of masonry walls under the floor shall be permitted to be used.</p> <p>2304.11.4.1 Cross-laminated timber roofs. Cross-laminated timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.</p>		X			Clarification.
S200-22	<p>Revise as follows:</p> <p>2303.1 General. Structural sawn lumber; end-jointed lumber; prefabricated wood I-joists; structural glued-laminated timber; <u>cross-laminated timber</u>; wood structural panels; fiberboard sheathing (where used structurally); hardboard siding (where used structurally); particleboard; preservative-treated wood; structural log members; structural composite lumber; round timber poles and piles; fire-retardant-treated wood; hardwood plywood; wood trusses; joist hangers; nails; and staples shall conform to the applicable provisions of this section.</p> <p>2303.1.4 Structural glued cross Cross-laminated timber. Cross-laminated timbers shall be manufactured and identified in accordance with ANSI/APA PRG 320.</p>		X			Code update.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
S201-22	<p>Revise as follows: 2303.2 Fire-retardant-treated wood. <i>Fire-retardant-treated wood</i> is any wood product that, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E84 or UL 723, a <i>listed flame spread index</i> of 25 or less. Additionally, the The ASTM E84 or UL 723 test shall be continued for an <u>additional 20-minute period</u> and the flame front shall not progress more than 10¹/₂ feet (3200 mm) beyond the centerline of the burners at any time during the test.</p> <p>Add new text as follows: 2303.2.1 Alternate fire testing. A Fire-retardant wood is also any wood product, that when impregnated with chemicals by a pressure process or other means during manufacture, shall have <u>which, when tested in accordance with to ASTM E2768, has a listed flame spread index of 25 or less and where the flame front does not progress more than 10.5 feet (3200 mm) beyond the centerline of the burners at any time during the test, shall also be considered fire-retardant-treated wood.</u></p>		X			Clarification.
S202-22	<p>Revise as follows: 2303.2.5 Strength adjustments Design values. Design values for untreated lumber and wood structural panels, fire-retardant-treated wood, including connection design values, shall be subject to all adjustments applicable to untreated wood as specified in this chapter and shall be further adjusted to account for the effects of the fire-retardant treatment. Section 2303.1, shall be adjusted for fire-retardant-treated wood. Adjustments to design values for the effects of the fire-retardant treatment shall be based on an <i>approved</i> method of investigation that takes into consideration the effects of the anticipated temperature and humidity to which the <i>fire-retardant-treated wood</i> will be subjected, the type of treatment and <u>the</u> redrying procedures. Adjustments to flexural design values for fire-retardant-treated plywood shall be determined in accordance with Section 2303.2.5.1. Adjustments to flexural, tension, compression and shear design values for fire- retardant-treated lumber shall be determined in accordance with Section 2303.2.5.2.</p> <p>2303.2.5.1 Wood structural panels Fire-retardant-treated plywood. The effect of treatment and the method of redrying after treatment, and <u>any treatment-based effects due to</u></p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>exposure to high temperatures and high humidities on the flexure properties of fire-retardant-treated softwood plywood shall be determined in accordance with ASTM D5516. The test data developed by <u>in accordance with</u> ASTM D5516 shall be used to develop <u>treatment</u> adjustment factors, maximum loads and spans, or both, for untreated plywood design values in accordance with ASTM D6305. Each manufacturer shall publish the allowable maximum <i>loads</i> and spans for service as floor and roof sheathing for its treatment <u>based on the adjusted design values and taking into account the climatological location.</u></p> <p>2303.2.5.2 Fire-retardant-treated lumber. For each species of wood that is treated, the effects of the treatment, the method of and redrying after treatment and <u>any treatment-based effects due to</u> exposure to high temperatures and high humidities on the allowable design properties of fire-retardant-treated lumber shall be determined in accordance with ASTM D5664. The test data developed by <u>in accordance with</u> ASTM D5664 shall be used to develop modification <u>treatment adjustment</u> factors for use at or near room temperature and at elevated temperatures and humidity in accordance with ASTM D6841. Each manufacturer shall publish the modification <u>treatment adjustment</u> factors for service at <u>maximum</u> temperatures of not less than 80°F (27°C) and for roof framing. The roof framing modification factors shall take into consideration the climatological location.</p>					
S203-22	<p>Revise as follows:</p> <p>2303.2.5 Strength adjustments. Design values for untreated lumber, and <i>wood structural panels</i>, as specified in Section 2303.1, shall be adjusted for <i>fire-retardant-treated wood</i>. Adjustments to design values shall be based on an <i>approved</i> method of investigation that takes into consideration the effects of the anticipated temperature and humidity to which the <i>fire-retardant-treated wood</i> will be subjected, the type of treatment and redrying procedures. <u>Design values and treatment adjustment factors for fire-retardant-treated laminated veneer lumber shall be determined in accordance with 2303.2.5.3.</u></p> <p>Add new text as follows:</p> <p>2303.2.5.3 Fire-retardant-treated laminated veneer lumber. <u>The effect of treatment and redrying after treatment and any treatment-based effects due to exposure to high temperatures and high humidities on the allowable design properties of fire-</u></p>	-	X			Design values added for fire-retardant-treated laminated veneer lumber.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

retardant-treated laminated veneer lumber shall be determined in accordance with ASTM D8223. Each manufacturer shall publish reference design values and treatment-based design value adjustment factors in accordance with ASTM D8223, taking into account the climatological location.

S206-22

Revise as follows:

TABLE 2304.6.1 MAXIMUM ALLOWABLE STRESS BASIC DESIGN WIND SPEED, V_{asd} , PERMITTED FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES^{a, b, c}

MINIMUM NAIL Size	PENETRATION (inches)	MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		MAXIMUM ALLOWABLE STRESS BASIC DESIGN WIND SPEED, V_{asd} ^d (MPH)		
					Edges (inches e,c)	Field (inches e,c)	Wind exposure category		
							B	C	D
6d common (2.0" x 0.113")	1.5	24/0	5/16	16	6	12 $\frac{1}{2}$	110	90	85
							150	125	110
	24/16	5/16	16	6	12	150	125	110	
						120	110	105	
8d common (2.5" x 0.131")	1.75	24/16	5/16	16	6	12	130	110	105
							150	125	110
	24	5/16	16	6	12	140	110	105	
						140	110	105	

For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.

a. Panel strength axis shall be parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.

b. The table is based on wind pressures acting toward and away from building surfaces in accordance with Section 307. 4 of ASCE 7. Lateral requirements shall be in accordance with Section 2305 or 2308.

c. Wood structural panels with span ratings of wall-16 or wall-24 shall be permitted as an alternative to panels with a 24/0 span rating. Plywood siding rated 16 on center or 24 on center shall be permitted as an alternative to panels with a 24/16 span rating. Wall-16 and plywood siding 16 on center shall be used with studs spaced not more than 16 inches on center.

d. V_{asd} shall be determined in accordance with Section 1609.3.1.

X

Consistency.

S207-22

Revise as follows:

TABLE 2304.6.1 MAXIMUM ALLOWABLE STRESS BASIC DESIGN WIND SPEED, V_{asd} , PERMITTED FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES^{a, b, c}

MINIMUM NAIL Size	PENETRATION (inches)	MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		MAXIMUM ALLOWABLE STRESS BASIC DESIGN WIND SPEED, V_{asd} ^d (MPH)		
					Edges (inches e,c)	Field (inches e,c)	Wind exposure category		
							B	C	D
6d common (2.0" x 0.113")	1.5	24/0	5/16	16	6	12 $\frac{1}{2}$	110	90	85
							150	125	110
	24/16	5/16	16	6	12	130	110	105	
						150	125	110	
8d common (2.5" x 0.131")	1.75	24/16	5/16	16	6	12	110	90	85
							150	125	110
	24	5/16	16	6	12	110	90	85	
						110	90	85	

For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.

X

Increased cost of construction when low specific gravity wood species are used.

Adds needed direction for designers.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE														
		Decrease	Neutral	Increase																
							Sub Code:													
	<p>a. Panel strength axis shall be parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.</p> <p>b. The table is based on wind pressures acting toward and away from building surfaces in accordance with Section 307. 4 of ASCE 7. Lateral requirements shall be in accordance with Section 2305 or 2308.</p> <p>c. Wood structural panels with span ratings of wall-16 or wall-24 shall be permitted as an alternative to panels with a 24/0 span rating. Plywood siding rated 16 on center or 24 on center shall be permitted as an alternative to panels with a 24/16 span rating. Wall-16 and plywood siding 16 on center shall be used with studs spaced not more than 16 inches on center.</p> <p>d. V_{asd} shall be determined in accordance with Section 1609.3.1.</p> <p>e. Where the specific gravity of the wood species used for wall framing is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, nail spacing in the field of the panel shall be multiplied by 0.67. Where the specific gravity of the wood species used for wall framing is less than 0.35, fastening of the wall sheathing shall be designed in accordance with AWC NDS.</p>																			
S209-22	<p>Revise as follows: TABLE 2304.8(2) SHEATHING LUMBER, MINIMUM GRADE REQUIREMENTS: BOARD GRADE</p> <table border="1"> <thead> <tr> <th>SOLID FLOOR OR ROOF SHEATHING</th> <th>SPACED ROOF SHEATHING</th> <th>GRADING RULES</th> </tr> </thead> <tbody> <tr> <td>Utility</td> <td>Standard</td> <td>NLGA, <u>PLIB</u>/WCLIB, gr WW/PA</td> </tr> <tr> <td>4 common or utility</td> <td>3 common or standard</td> <td>NLGA, <u>PLIB</u>/WCLIB, WW/PA, <u>NSLB</u> or NELMA</td> </tr> <tr> <td>No. 3</td> <td>No. 2</td> <td>SPIB</td> </tr> <tr> <td>Merchantable</td> <td>Construction common</td> <td>RIS</td> </tr> </tbody> </table>	SOLID FLOOR OR ROOF SHEATHING	SPACED ROOF SHEATHING	GRADING RULES	Utility	Standard	NLGA, <u>PLIB</u> /WCLIB, gr WW/PA	4 common or utility	3 common or standard	NLGA, <u>PLIB</u> /WCLIB, WW/PA, <u>NSLB</u> or NELMA	No. 3	No. 2	SPIB	Merchantable	Construction common	RIS		X		Editorial.
SOLID FLOOR OR ROOF SHEATHING	SPACED ROOF SHEATHING	GRADING RULES																		
Utility	Standard	NLGA, <u>PLIB</u> /WCLIB, gr WW/PA																		
4 common or utility	3 common or standard	NLGA, <u>PLIB</u> /WCLIB, WW/PA, <u>NSLB</u> or NELMA																		
No. 3	No. 2	SPIB																		
Merchantable	Construction common	RIS																		
S210-22	<p>Revise as follows: TABLE 2304.8(3) ALLOWABLE SPANS AND LOADS FOR WOOD STRUCTURAL PANEL SHEATHING AND SINGLE-FLOOR GRADES CONTINUOUS OVER TWO OR MORE SPANS WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS^a Portions of table not shown remain unchanged. d. Allowable load at maximum span. <u>Where the total load includes snow, use allowable stress design snow loads.</u> TABLE 2304.8(5) ALLOWABLE LOAD (PSF) FOR WOOD STRUCTURAL PANEL ROOF SHEATHING CONTINUOUS OVER TWO OR MORE SPANS AND STRENGTH AXIS PARALLEL TO SUPPORTS (Plywood structural panels are five-ply, five-layer unless otherwise noted)^a</p>		X		Editorial.															

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

Portions of table not shown remain unchanged.

PANEL GRADE	THICKNESS (inch)	MAXIMUM SPAN (inches)	LOAD AT MAXIMUM SPAN (psf)	
			Live	Total ^c
Structural sheathing	1/16	24	20	30
	15/32	24	35 ^d	45 ^d
	1/2	24	40 ^d	50 ^d
	19/32, 5/8	24	70	80
	23/32, 3/4	24	90	100
Sheathing, other grades covered in DOC PS 1 or DOC PS 2	1/16	16	40	50
	15/32	24	20	25
	1/2	24	25	30
	19/32	24	40 ^d	50 ^d
	5/8	24	45 ^d	55 ^d
	23/32, 3/4	24	60 ^d	65 ^d

c. Where the total load includes snow, use allowable stress design snow loads.

Revise as follows:

TABLE 2308.4.1.1(1) HEADER AND GIRDER SPANS^{a, b} FOR EXTERIOR BEARING WALLS (Maximum spans for Douglas fir-larch, hem-fir, Southern pine and spruce-pine-fir and required number of jack studs)

Portions of table not shown remain unchanged.

e. Use 30 psf allowable stress design ground snow load for cases in which allowable stress design ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.

Revise as follows:

2404.2 Sloped glass. Glass sloped more than 15 degrees (0.26 rad) from vertical in skylights, sunrooms, sloped roofs and other exterior applications shall be designed to resist the most critical combinations of loads determined by Equations 24-2, 24-3 and 24-4.

$$F_g = 0.6W_o - D \quad \text{(Equation 24-2)}$$

$$F_g = 0.6Wi + D + 0.5 \cdot 0.35S \quad \text{(Equation 24-3)}$$

$$F_g = 0.3Wi + D + 0.7S \quad \text{(Equation 24-3)}$$

where:

D = Glass dead load psf (kN/m²).

For glass sloped 30 degrees (0.52 rad) or less from horizontal, = 13 t_g (For SI: 0.0245 t_g).

For glass sloped more than 30 degrees (0.52 rad) from horizontal,

$$= 13 t_g \cos \theta \quad \text{(For SI: } 0.0245 t_g \cos \theta \text{)}$$

F_g = Total load, psf (kN/m²) on glass.

S = Snow load, psf (kN/m²) as determined in Section 1608 from the reliability-targeted (strength-based) maps in Figures 1608.2(1) through 1608.2(4).

t_g = Total glass thickness, inches (mm) of glass panes and plies.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>Wi = Inward wind force, psf (kN/m2) due to basic design wind speed, V, as calculated in Section 1609. Wo = Outward wind force, psf (kN/m2) due to basic design wind speed, V, as calculated in Section 1609. θ = Angle of slope from horizontal.</p> <p>Exception: The performance grade rating of unit skylights and tubular daylighting devices shall be determined in accordance with Section 2405.5.</p> <p>The design of sloped glazing shall be based on Equation 24-5.</p> $F_g \leq F_{ga}$ <p>where: F_g = Total load on the glass as determined by Equations 24-2, 24-3 and 24-4. F_{ga} = Short duration load resistance of the glass as determined in accordance with ASTM E1300 for Equations 24-2 and 24-3; or the long</p>					
S211-22	<p>Revise as follows: 2304.10.1 Connection fire-resistance rating Fire protection of connections. Fire-resistance ratings for connections in <u>Connections used with fire-resistance-rated members and in fire-resistance-rated assemblies of Type IV-A, IV-B or IV-C construction shall be protected for the time associated with the fire-resistance rating. Protection time shall be determined by one of the following:</u></p> <ol style="list-style-type: none"> 1. Testing in accordance with Section 703.2 where the connection is part of the <i>fire-resistance</i> test. 2. Engineering analysis that demonstrates that the temperature rise at any portion of the connection is limited to an average temperature rise of 250°F (139°C), and a maximum temperature rise of 325°F (181°C), for a time corresponding to the required <i>fire-resistance</i> rating of the structural element being connected. For the purposes of this analysis, the connection includes connectors, fasteners and portions of wood members included in the structural design of the connection. 		X			Clarification.
S213-22	<p>Revise as follows: TABLE 2304.10.2 FASTENING SCHEDULE Portions of table not shown remain unchanged.</p>			X	Increased cost of construction when low specific gravity	Adds needed direction for designers.

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S215-22	<p>Revise as follows: 2304.10.6 Fasteners and connectors in contact with preservative-treated and fire-retardant-treated wood. Fasteners, including nuts and washers, and connectors in contact with <i>preservative-treated</i> and <i>fire-retardant-treated wood</i> shall be in accordance with Sections 2304.10.6.1 through 2304.10.6.4. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A153 <u>Class D or ASTM A641 Class 3S [1 oz/ft² (305 g/m²)]</u>. Stainless steel driven fasteners shall be in accordance with the material requirements of ASTM F1667.</p>		X			Clarification.																							
S217-21	<p>Revise as follows: 2304.11.1.1 Columns. Minimum dimensions of columns shall be in accordance with Table 2304.11. Columns shall be continuous or superimposed throughout all stories and connected in an <i>approved</i> manner. <u>Columns shall be continuous or aligned vertically from floor to floor superimposed throughout all stories of Type IV-HT construction.</u> Girders and beams at column connections shall be closely fitted around columns and adjoining ends shall be cross tied to each other, or intertied by caps or ties, to transfer horizontal <i>loads</i> across joints. Wood bolsters shall not be placed on tops of columns unless the columns support roof <i>loads</i> only. Where traditional heavy timber detailing is used, connections shall be by means of reinforced concrete or metal caps with brackets, by properly designed steel or iron caps, with pintles and base plates, by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other <i>approved</i> methods.</p>		X			Clarification.																							
S218-22	<p>Revise as follows: 2305.1 General. Structures using wood-frame <i>shear walls</i> or wood-frame <i>diaphragms</i> to resist wind, <u>and seismic or other lateral loads</u> shall be designed and constructed in accordance with AWC SDPWS and the applicable provisions of Sections 2305, 2306 and 2307. Add new text as follows:</p>		X			Clarification.																							

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	<p>2305.1.2 Permanent load duration. Permanent loads are associated with permanent load duration as defined by the ANSI/AWC NDS. For wood shear walls and wood diaphragms designed to resist loads of permanent load duration, the design unit shear capacities shall be taken as the AWC SDPWS nominal unit shear capacities, multiplied by 0.2 for use with <i>Allowable Stress Design</i> in Section 2306 and 0.3 for use with <i>Load and Resistance Factor Design</i> in Section 2307.</p>																					
S219-22	<p>Revise as follows: TABLE 2308.6.3(1) BRACING METHODS Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">METHODS, MATERIAL</th> <th rowspan="2">MINIMUM THICKNESS</th> <th rowspan="2">FIGURE</th> <th colspan="2">CONNECTION CRITERIA^d</th> </tr> <tr> <th>Fasteners</th> <th>Spacing</th> </tr> </thead> <tbody> <tr> <td>GB</td> <td>1/2" or 3/8" by not less than 4"</td> <td></td> <td>Section 2506.2 for exterior and interior sheathing; 5d annual ringed cooler nails (1 7/8" x 0.086") or 1 1/4" screws (Type W or S) for 1/2" gypsum board or 1 3/8" screws (Type W or S) for 3/8" gypsum board.</td> <td>For all braced wall panel locations: 7" o.c. along panel edges (including top and bottom plates) and 7" o.c. in the field.</td> </tr> <tr> <td>Gypsum board (Double 24" side)</td> <td>wide to studs at maximum of 24" o.c.</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA ^d		Fasteners	Spacing	GB	1/2" or 3/8" by not less than 4"		Section 2506.2 for exterior and interior sheathing; 5d annual ringed cooler nails (1 7/8" x 0.086") or 1 1/4" screws (Type W or S) for 1/2" gypsum board or 1 3/8" screws (Type W or S) for 3/8" gypsum board.	For all braced wall panel locations: 7" o.c. along panel edges (including top and bottom plates) and 7" o.c. in the field.	Gypsum board (Double 24" side)	wide to studs at maximum of 24" o.c.					X		Clarification.
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S220-12	<p>Revise as follows: 2306.1.3 Preservative-treated wood allowable stresses stress adjustments. The allowable unit stresses for <i>preservative-treated wood</i> conforming to AWP A U1 and M4 need not be adjusted for treatment, but are subject to other adjustments. <u>Load duration factors greater than 1.6 shall not be used in the structural design of preservative-treated wood members.</u> The allowable unit stresses for fire-retardant-treated wood, including fastener values, shall be developed from an approved method of investigation that considers the effects of anticipated temperature and humidity to which the fire-retardant treated wood will be subjected, the type of treatment and the redrying process. Other adjustments are applicable except that the impact load duration shall not apply. Add new text as follows: 2306.1.4 Fire-retardant-treated wood allowable stresses.. <u>The allowable unit stresses for fire-retardant-treated wood, including connection design values, shall be developed in accordance with the provisions of Section 2303.2.5. Load duration factors greater than 1.6 shall not be used in the structural design of fire-retardant-treated wood members.</u></p>		X		Clarification.																	
S222-22	<p>Add new text as follows: 2308.2.7 Hillside light-frame construction. <u>Design in accordance with Section 2308.1.1 shall be provided for the floor immediately above the cripple walls or post and beam systems and all structural elements and connections from this floor down to and including connections to the foundation and</u></p>			X	Increase depends on existing design practice.	Increased safety.																

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	<p><u>design of the foundation to transfer lateral loads from the framing above in buildings where all of the following apply:</u></p> <ol style="list-style-type: none"> 1. <u>The grade slope exceeds 1 unit vertical in 5 units horizontal where averaged across the full length of any side of the building, and</u> 2. <u>The tallest cripple wall clear height exceeds 7 feet (2134 mm), or where a post and beam system occurs at the building perimeter, the post and beam system tallest post clear height exceeds 7 feet (2134 m), and</u> 3. <u>Of the total plan area below the lowest framed floor, whether open or enclosed, less than 50 percent is occupiable space having interior wall finishes conforming to Section 2304.7 or Chapter 25 of this code.</u> <p>Exception: <u>Light-frame buildings in which the lowest framed floor is supported directly on concrete or masonry walls over the full length of all sides except the downhill side of the building are exempt from this provision.</u></p> <p>Revise as follows: 2308.2 Limitations. Buildings are permitted to be constructed in accordance with the provisions of <i>conventional light-frame construction</i>, subject to the limitations in Sections 2308.2.1 through 2308.2.6 2308.2.7.</p>					
S223-22	<p>Revise as follows: 2308.1 General. The requirements of this section are intended for <u>buildings of conventional light-frame construction not exceeding the story height limitations of Section 2308.2.1.</u> Other construction methods are permitted to be used, provided that a satisfactory design is submitted showing compliance with other provisions of this code. Interior nonload-bearing partitions, ceilings and curtain walls of <i>conventional light-frame construction</i> are not subject to the limitations of Section 2308.2. Detached one- and two-family dwellings and townhouses not more than three <i>stories above grade plane</i> in height with a separate <i>means of egress</i> and their accessory structures shall comply with the <i>International Residential Code</i>.</p> <p>Delete without substitution: 2308.1.1 Portions exceeding limitations of conventional light-frame construction. Where portions of a building of otherwise <i>conventional light frame construction</i> exceed the limits of Section 2308.2, those portions and the supporting load path shall be</p>		X			Clarification.

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	<p>designed in accordance with accepted engineering practice and the provisions of this code. For the purposes of this section, the term “portions” shall mean parts of buildings containing volume and area such as a room or a series of rooms. The extent of such design need only demonstrate compliance of the nonconventional light framed elements with other applicable provisions of this code and shall be compatible with the performance of the conventional light-framed system.</p> <p>2308.1.2 Connections and fasteners. Connectors and fasteners used in conventional construction shall comply with the requirements of Section 2304.10.</p> <p>2308.2 Limitations. Buildings are permitted to be constructed in accordance with the provisions of <i>conventional light frame construction</i>, subject to the limitations in Sections 2308.2.1 through 2308.2.6.</p> <p>Add new text as follows:</p> <p><u>2308.3 Portions or elements exceeding limitations of conventional light frame construction.</u> <u>Where a building of otherwise conventional light-frame construction contains portions or structural elements that exceed the limits of Section 2308.2, those portions or elements, and the supporting load path, shall be designed in accordance with accepted engineering practice and the provisions of this code. For the purposes of this section, the term “portions” shall mean parts of buildings containing volume and area such as a room or a series of rooms. The extent of such design need only demonstrate compliance of the nonconventional light-framed elements with other applicable provisions of this code and shall be compatible with the performance of the conventional light-framed system.</u></p> <p><u>2308.4 Structural elements or systems not described herein.</u> <u>Where a building of otherwise conventional construction contains structural elements or systems not described in Section 2308, these elements or systems shall be designed in accordance with accepted engineering practice and the provisions of this code. The extent of such design need only demonstrate compliance of the nonconventional elements with other applicable provisions of this code and shall be compatible with the performance of the conventionally framed system.</u></p>					

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	<p>2308.5 Connections and fasteners. <u>Connectors and fasteners used in conventional construction shall comply with the requirements of Section 2304.10.</u></p> <p>Delete without substitution:</p> <p>2308.8 Design of elements. Combining of engineered elements or systems and conventionally specified elements or systems shall be permitted subject to the limits of Sections 2308.8.1 and 2308.8.2.</p> <p>2308.8.1 Elements exceeding limitations of conventional construction. Where a building of otherwise conventional construction contains structural elements exceeding the limits of Section 2308.2, these elements and the supporting <i>load</i> path shall be designed in accordance with accepted engineering practice and the provisions of this code.</p> <p>2308.8.2 Structural elements or systems not described herein. Where a building of otherwise conventional construction contains structural elements or systems not described in Section 2308, these elements or systems shall be designed in accordance with accepted engineering practice and the provisions of this code. The extent of such design need only demonstrate compliance of the nonconventional elements with other applicable provisions of this code and shall be compatible with the performance of the conventionally framed system.</p>					
S224-22	<p>Add new text as follows:</p> <p>2308.3.1 Scope. <u>The provisions of Section 2308.3 shall only apply to dimensional wood framing and shall not include engineered wood products, heavy timber, or pre-fabricated/manufactured wood assemblies.</u></p> <p>2308.3.2 Floor joists, roof rafters, and ceiling joists. <u>Notches on framing ends shall not exceed one-fourth the member depth. Notches in the top or bottom of the member shall not exceed one-sixth the depth and shall not be located in the middle third of the span. A notch not more than one-third of the depth is permitted in the top of a rafter or ceiling joist not further from the face of the support than the depth of the member. Holes bored in members shall not be within 2 inches (51 mm) of the top or bottom of the member and the diameter of any such hole shall not exceed one-third the depth of the member. Where the member is notched, the hole shall not be closer than 2 inches (51 mm) to the notch.</u></p>		X			Editorial.

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		Decrease	Neutral	Increase		
	<p>2308.3.2.1 Ceiling joists. Where ceiling joists also serve as floor joists, they shall be considered floor joists within this section.</p> <p>2308.3.3 Wall studs. In exterior walls and bearing partitions, a wood stud shall not be cut or notched in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.</p> <p>2308.3.4 Bored holes. The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall not be closer than $\frac{5}{8}$ inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.</p> <p>2308.3.5 Limitations. In designated lateral-force resisting system assemblies designed in accordance with this code and greater than three-stories in height or in Seismic Design Categories C, D, E, and F, the cutting, notching and boring of wall studs shall be as prescribed by the registered design professional.</p> <p>In structures designed in accordance with the International Residential Code, modification of wall studs shall comply with the International Residential Code.</p> <p>Delete without substitution:</p> <p>2308.4.2.4 Notches and holes. Notches on the ends of joists shall not exceed one-fourth the joist depth. Notches in the top or bottom of joists shall not exceed one-sixth the depth and shall not be located in the middle third of the span. Holes bored in joists shall not be within 2 inches (51 mm) of the top or bottom of the joist and the diameter of any such hole shall not exceed one-third the depth of the joist.</p> <p>2308.5.9 Cutting and notching. In exterior walls and bearing partitions, a wood stud shall not be cut or notched in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.</p> <p>2308.5.10 Bored holes. The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter</p>	-				

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall not be closer than $\frac{5}{8}$ inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.</p> <p>2308.7.4 Notches and holes. Notching at the ends of rafters or ceiling joists shall not exceed one fourth the depth. Notches in the top or bottom of the rafter or ceiling joist shall not exceed one sixth the depth and shall not be located in the middle one-third of the span, except that a notch not more than one-third of the depth is permitted in the top of the rafter or ceiling joist not further from the face of the support than the depth of the member. Holes bored in rafters or ceiling joists shall not be within 2 inches (51 mm) of the top and bottom and their diameter shall not exceed one-third the depth of the member.</p>					
S227-22	<p>Revise as follows:</p> <p>2308.7.5 Wind uplift. The roof construction shall have rafter and truss ties to the wall below. Resultant uplift <i>loads</i> shall be transferred to the foundation using a continuous <i>load</i> path. The rafter or truss to wall connection shall comply with Tables 2304.10.2 and 2308.7.5.</p> <p><u>Exception:</u> The truss to wall connection shall be permitted to be determined from the uplift forces as specified on the truss design drawings or as shown on the <i>construction documents</i>.</p> <p>TABLE 2308.7.5 REQUIRED RATING OF APPROVED UPLIFT CONNECTORS (pounds)^{a, b, c, e, f, g, h}</p> <p>Portions of table not shown remain unchanged.</p>		X			Editorial update.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

NOMINAL-BASIC DESIGN WIND SPEED, V_{asd}	ROOF SPAN (feet)							OVERHANGS (pounds/feet)
	12	20	24	28	32	36	40	
EXPOSURE B								
85-90	-7264	-12085	-14596	-169107	-193117	-217128	-241139	-38.55
90-100	-94102	-154139	-184158	-212177	-242195	-272214	-302233	-43.22
100-110	-131144	-204199	-262226	-305254	-349282	-393310	-436338	-53.36
110-120	-175190	-292265	-354302	-409339	-467377	-526414	-584452	-64.56
130	-240	-335	-382	-431	-479	-528	-576	
140	-294	-411	-470	-530	-590	-650	-710	
EXPOSURE C								
90	-126	-175	-199	-223	-247	-272	-296	
100	-179	-250	-285	-320	-356	-391	-426	
110	-238	-332	-380	-428	-476	-525	-573	
120	-302	-424	-485	-547	-608	-669	-731	
130	-371	-521	-597	-674	-751	-828	-904	
140	-446	-620	-719	-812	-904	-997	-1090	
EXPOSURE D								
90	-166	-232	-265	-298	-311	-364	-396	
100	-229	-321	-367	-413	-459	-505	-551	
110	-298	-418	-478	-539	-601	-662	-723	
120	-373	-526	-603	-679	-756	-833	-910	
130	-455	-641	-734	-829	-924	-1020	-1114	
140	-544	-767	-878	-992	-1106	-1220	-1333	

- a. The uplift connection requirements are based on a ~~3330~~-foot mean roof height.
- e. The uplift connection requirements ~~do not account for include~~ the effects of 24" overhangs. The magnitude of the loads shall be increased by adding the overhang loads found in the table. The overhang loads are based on framing spaced 24 inches on center. The overhang loads given shall be multiplied by the overhang projection and added to the roof uplift value in the table.
- g. Interpolation is permitted for intermediate values of V_{asd} and roof spans.
- h. The rated capacity of approved tie-down devices is permitted to include up to a 60-percent increase for wind effects where allowed by material specifications. The required rating of approved uplift connectors is based on Allowable Stress Design loads.
- i. V_{asd} shall be determined in accordance with Section 1609.3.

S228-22	<p>Revise as follows:</p> <p>2405.2 Allowable glazing materials and limitations. Sloped glazing shall be any of the following materials, subject to the listed limitations.</p> <ol style="list-style-type: none"> For monolithic glazing systems, the glazing material of the single light or layer shall be laminated glass with a minimum 30-mil (0.76 mm) polyvinyl butyral (or equivalent) interlayer, 	X			Clarification.
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Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>wired glass, light-transmitting plastic materials meeting the requirements of Section 2607<u>2606</u>, heat-strengthened glass or fully tempered glass.</p> <p>2. For multiple-layer glazing systems, each light or layer shall consist of any of the glazing materials specified in Item 1.</p> <p>Annealed glass is permitted to be used as specified in Exceptions 2 and 3 of Section 2405.3.</p> <p>Laminated glass and plastic materials described in Items 1 and 2 shall not require the screening or height restrictions provided in Section 2405.3.</p> <p>For additional requirements for plastic skylights, see Section 2610. Glass-block construction shall conform to the requirements of Section 2110.1.</p> <p>2405.3 Screening. Where used in monolithic glazing systems, annealed, heat strengthened, fully tempered and wired glass shall have Broken glass retention screens, <u>where required</u>, installed below the glazing material. The screens and their fastenings shall be: capable of supporting twice the weight of the glazing; firmly and substantially fastened to the framing members; and installed within 4 inches (102 mm) of the glass. The screens shall be constructed of a noncombustible material not thinner than No. 12 B&S gage (0.0808 inch) with mesh not larger than 1 inch by 1 inch (25 mm by 25 mm). In a corrosive atmosphere, structurally equivalent noncorrosive screen materials shall be used. Annealed, heat strengthened, fully tempered and wired glass, where used in multiple-layer glazing systems as the bottom glass layer over the walking surface, shall be equipped with screening that conforms to the requirements for monolithic glazing systems.</p> <p>Exception: In monolithic and multiple-layer sloped glazing systems, the following applies:</p> <ol style="list-style-type: none"> Fully tempered glass installed without protective screens where glazed between intervening floors at a slope of 30 degrees (0.52 rad) or less from the vertical plane, shall have the highest point of the glass 10 feet (3048 mm) or less above the walking surface. Screens are not required below any glazing material, including annealed glass, where the walking surface below the glazing material is permanently protected from the risk of falling glass or the area below the glazing material is not a walking surface. 					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>3. Any glazing material, including annealed glass, is permitted to be installed without screens in the sloped glazing systems of commercial or detached noncombustible greenhouses used exclusively for growing plants and not open to the public, provided that the height of the greenhouse at the ridge does not exceed 30 feet (9144 mm) above grade.</p> <p>4. Screens shall not be required in individual dwelling units in Groups R-2, R-3 and R-4 where fully tempered glass is used as single glazing or as both panes in an insulating glass unit, and the following conditions are met:</p> <p>4.1. Each pane of the glass is 16 square feet (1.5 m²) or less in area.</p> <p>4.2. The highest point of the glass is 12 feet (3658 mm) or less above any walking surface or other accessible area.</p> <p>4.3. The glass thickness is 3/16 inch (4.8 mm) or less.</p> <p>5. Screens shall not be required for laminated glass with a 15-mil (0.38 mm) polyvinyl butyral (or equivalent) interlayer used in individual dwelling units in Groups R-2, R-3 and R-4 within the following limits:</p> <p>1.1 Each pane of glass is 16 square feet (1.5 m²) or less in area.</p> <p>1.2 The highest point of the glass is 12 feet (3658 mm) or less above a walking surface or other accessible area.</p> <p>Add new text as follows:</p> <p><u>2405.3.1 Screens under monolithic glazing.</u> Heat-strengthened glass and fully tempered glass shall have screens installed below the full area of the glazing material.</p> <p><u>2405.3.2 Screens under multiple-layer glazing.</u> Heat-strengthened glass, fully tempered glass and wired glass used as the bottom glass layer shall have screens installed below the full area of the glazing material.</p> <p><u>2405.3.3 Screening not required in monolithic and multiple-layer sloped glazing systems.</u> In monolithic and multiple-layer sloped glazing systems, the following applies:</p> <p>1. Fully tempered glass shall be permitted to be installed without retention screens where glazed between intervening floors at a slope of 30 degrees (0.52 rad) or less from the vertical plane, and having the highest point of the glass 10 feet (3048 mm) or less above the walking surface.</p> <p>2. Retention screens are not required below any glazing material, including annealed glass, where the walking surface below the</p>					

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>glazing material is permanently protected from the risk of falling glass or the area below the glazing material is not a walking surface.</p> <p>3. Any glazing material, including annealed glass, is permitted to be installed without retention screens in the sloped glazing systems of commercial or detached noncombustible greenhouses used exclusively for growing plants and not open to the public, provided that the height of the greenhouse at the ridge does not exceed 30 feet (9144 mm) above grade.</p> <p>4. Retention screens shall not be required in individual dwelling units in Groups R-2, R-3 and R-4 where fully tempered glass is used as single glazing or as both panes in an insulating glass unit, and all of the following conditions are met:</p> <p>4.1. Each pane of the glass is 16 square feet (1.5 m²) or less in area.</p> <p>4.2. The highest point of the glass is 12 feet (3658 mm) or less above any walking surface or other accessible area.</p> <p>4.3. The glass thickness is ³/₁₆ inch (4.8 mm) or less.</p> <p>5. Retention screens shall not be required for laminated glass with a 15-mil (0.38 mm) polyvinyl butyral (or equivalent) interlayer used in individual dwelling units in Groups R-2, R-3 and R-4 where both of the following conditions are met:</p> <p>5.1. Each pane of glass is 16 square feet (1.5 m²) or less in area.</p> <p>5.2. The highest point of the glass is 12 feet (3658 mm) or less above a walking surface or other accessible area.</p> <p>2405.3.4 Screens not required. For all other types of glazing complying with Section 2405.2, retention screens shall not be required.</p>					
S229-22	<p>Revise as follows:</p> <p>2406.1 Human impact loads. All glass panes in individual glazed areas, including glass mirrors, single panes of glass, laminated glass and all panes in multi-pane glass assemblies in hazardous locations as defined in Section 2406.4 shall comply with Sections 2406.1.1 through 2406.1.4.</p> <p>Exception: Mirrors and other glass panels mounted or hung on a surface that provides a continuous backing support.</p>		X			Increased safety.
S231-22	<p>Revise as follows:</p> <p>2406.4.3 Glazing in windows. Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered to be a hazardous location:</p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>1. The exposed area of an individual pane is greater than 9 square feet (0.84 m²).</p> <p>2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor, roof, or adjacent walking surface.</p> <p>3. The top edge of the glazing is greater than 36 inches (914 mm) above the floor, roof, or adjacent walking surface.</p> <p>4. One or more walking surface(s) are within 36 inches (914 mm), measured horizontally and in a straight line, of the plane of the glazing.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Decorative glazing. Where a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal <i>load</i> of 50 pounds per linear foot (730 N/m) without contacting the glass and be not less than 1½ inches (38 mm) in cross-sectional height. For insulating glass units or windows with multiple layers of glazing, these requirements pertain only to the layer(s) on the accessible side(s) of the windows. Outboard panes in insulating glass units or multiple glazing where the bottom exposed edge of the glass is 8 feet (2438 mm) or more above any grade or walking surface adjacent to the glass exterior. 18 inches (457 mm) or more above any adjacent exterior surface. above 25 feet (7620 mm) or more above any grade, roof, walking surface or other horizontal or sloped (within 45 degrees of horizontal) (0.79 rad) surface adjacent to the glass exterior. 					
S232-22	<p>Revise as follows:</p> <p>2406.5 Fire department access panels. Fire department glass access panels shall be of tempered glass. For multi-panel glass assemblies insulating glass units, all panes shall be tempered glass.</p>		X			Editorial.
S234-22	<p>Revise as follows:</p> <p>2409.1 Glass walkways. Glass installed as a part of a floor/ceiling assembly as a walking surface and constructed with laminated glass shall comply with ASTM E2751 or with the <i>load</i> requirements specified in Chapter 16 <u>under the provisions of Section 104.11</u>. Such assemblies shall comply with the <i>fire-</i></p>		X			Clarification.

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE												
		Decrease	Neutral	Increase														
Sub Code:																		
	<i>resistance rating</i> and marking requirements of this code where applicable.																	
S235-22	<p>Revise as follows: 2407.1.1 Loads. Glass <i>handrails</i> and guards and their support systems shall be designed to withstand the <i>loads</i> specified in Section 1607.9. <u>Calculated stresses in glass elements of <i>handrails</i> and <i>guards</i> due to these loads shall be limited to a maximum of 3,000 psi (20.7 MPa) for heat strengthened glass and 6,000 psi (41.4 MPa) for fully tempered glass. Glass <i>handrails</i> and <i>guards</i> shall be designed using a factor of safety of four. Calculated stresses for the loads specified in Section 1607.9 shall be less than or equal to 3,000 psi (20.7 MPa) for heat strengthened glass and less than or equal to 6,000 psi (41.4 MPa) for fully tempered glass.</u></p>		X			Clarification.												
S239-22	<p>Revise as follows: TABLE 2508.1 INSTALLATION OF GYPSUM CONSTRUCTION</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Gypsum board and gypsum panel products</td> <td>GA 216; ASTM C840</td> </tr> <tr> <td>Gypsum sheathing and gypsum panel products</td> <td>ASTM C1280; <u>GA-253</u></td> </tr> <tr> <td>Gypsum veneer base</td> <td>ASTM C844</td> </tr> <tr> <td>Interior lathing and furring</td> <td>ASTM C841</td> </tr> <tr> <td>Steel framing for gypsum board and gypsum panel products</td> <td>ASTM C754; C1007</td> </tr> </tbody> </table> <p>2508.2 Limitations. <i>Gypsum wallboard or gypsum plaster</i> shall not be used in any exterior surface where such gypsum construction will be exposed directly to the weather. <i>Gypsum wallboard</i> shall not be used where there will be direct exposure to water or continuous high humidity conditions. <i>Gypsum sheathing</i> shall be installed on exterior surfaces in accordance with ASTM C1280<u>or GA-253</u>.</p>	MATERIAL	STANDARD	Gypsum board and gypsum panel products	GA 216; ASTM C840	Gypsum sheathing and gypsum panel products	ASTM C1280; <u>GA-253</u>	Gypsum veneer base	ASTM C844	Interior lathing and furring	ASTM C841	Steel framing for gypsum board and gypsum panel products	ASTM C754; C1007		X			Editorial.
MATERIAL	STANDARD																	
Gypsum board and gypsum panel products	GA 216; ASTM C840																	
Gypsum sheathing and gypsum panel products	ASTM C1280; <u>GA-253</u>																	
Gypsum veneer base	ASTM C844																	
Interior lathing and furring	ASTM C841																	
Steel framing for gypsum board and gypsum panel products	ASTM C754; C1007																	
S240-22 Part I, Part II	<p>Revise as follows: 2510.6 Water-resistive barriers. <i>Water-resistive barriers</i> shall be installed as required in Section 1403.2 and, where applied over wood-based exterior sheathing, shall comply with Section 2510.6.1 or 2510.6.2. <u>Exception: Sections 2510.6.1 and 2510.6.2 shall not apply to construction where accumulation, condensation or freezing of moisture will not damage the materials.</u></p>			X	\$0.17 sqft. for house wrap to \$0.30 -\$1.90 sqft. for moist and marine climates for stucco on non-wood sheatings.	Expands explicit drainage to stucco systems applied over any exterior sheathing.												
S241-22 Part I	<p>Revise as follows: 2510.6.1 Dry climates. One of the following shall apply for dry (B) climate zones: 1. The water-resistive barrier shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater</p>		X			Clarification.												

Table 10. 2024 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IBC CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
	<p>than two layers of water-resistive barrier complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing, installed in accordance with Section 1404.4 and intended to drain to the water-resistive barrier, is directed between the layers.</p> <p>2. The <i>water-resistive barrier</i> shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of <i>water-resistive barrier</i> complying with ASTM E2556, Type II. The <i>water-resistive barrier</i> shall be separated from the stucco by a layer of foam plastic insulating sheathing or other nonwater absorbing layer, <u>or drainage space or means of drainage complying with 2510.6.2.</u> or a drainage space. A means of drainage, as prescribed in 1402.2, shall be provided to the exterior side of the water resistive barrier.</p>					
S241-22 Part II	<p>Revise as follows:</p> <p>R703.7.3.1 Dry climates . In Dry (B) climate zones indicated in Figure N1101.7, <i>water-resistive barriers</i> shall comply with one of the following:</p> <p>1. The <i>water-resistive barrier</i> shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of a <i>water-resistive barrier</i> complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane. Flashing installed in accordance with Section R703.4 and intended to drain to the <i>water-resistive barrier</i> shall be directed between the layers.</p> <p>2. The <i>water-resistive barrier</i> shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of a <i>water-resistive barrier</i> complying with ASTM E2556, Type II. The <i>water-resistive barrier</i> shall be separated from the stucco by a layer of foam plastic <i>insulating sheathing</i> or other non-water-absorbing layer, or a designed drainage space. <u>A means of drainage, as prescribed in R703.1.1, shall be provided to the exterior side of the water-resistive barrier. Flashing installed in accordance with Section 703.4 and intended to drain to the water-resistive barrier shall be directed to the exterior side of the water-resistive barrier.</u></p>		X			Clarification.

APPENDIX K

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #		IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
2024 IRC STRUCTURAL CHANGES SUMMARY		Decrease	Neutral	Increase		
Sub Code:						
RB5-22	<p>Revise as follows:</p> <p>R101.2 Scope. The provisions of this code shall apply to the construction, <i>alteration</i>, movement, enlargement, replacement, <i>repair</i>, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and <i>townhouses</i> not more than three stories above <i>grade plane</i> in height with a separate means of egress and their <i>accessory structures</i> not more than three stories above <i>grade plane</i> in height.</p> <p>Exception: The following shall be permitted to be constructed in accordance with this code where provided with an automatic sprinkler system complying with Section P2904:</p> <ol style="list-style-type: none"> 1. Live/work units located in townhouses and complying with the requirements of Section 508.5 of the International Building Code. 2. Owner-occupied <i>lodging houses</i> with five or fewer guestrooms. 3. A care facility with five or fewer persons receiving custodial care within a <i>dwelling unit</i>. 4. A care facility with five or fewer persons receiving medical care within a <i>dwelling unit</i>. 5. A <u>day care facility for five or fewer persons children of any age receiving care that are within a single-family dwelling unit.</u> 6. A care facility for five or fewer persons receiving care within a dwelling unit. 		X			Clarification.
RB7-22	<p>APPENDIX AJ EXISTING BUILDINGS AND STRUCTURES SECTION AJ101 PURPOSE AND INTENT</p> <p>AJ101.1 General. The purpose of these provisions is to encourage the continued use or reuse of legally existing buildings and structures. These provisions are intended to permit work in existing buildings that is consistent with the purpose of this code. Compliance with these provisions shall be deemed to meet the requirements of this code. <u>Repairs, alterations, additions, and relocation of existing buildings and structures shall comply with the provisions of this code for new construction, except as modified by this appendix.</u></p> <p>AJ101.2 Classification of work. For purposes of this appendix, work in existing buildings shall be classified into the categories</p>	X			Applying reasonable code standards with a reasonable level of safety for existing buildings reduces cost.	Reasonable standards.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>of repair, renovation, alteration and reconstruction. Specific requirements are established for each category of work in these provisions.</p> <p>AJ101.3 Multiple categories of work. Work of more than one category shall be part of a single work project. Related work permitted within a 12-month period shall be considered to be a single work project. Where a project includes one category of work in one building area and another category of work in a separate and unrelated area of the building, each project area shall comply with the requirements of the respective category of work. Where a project with more than one category of work is performed in the same area or in related areas of the building, the project shall comply with the requirements of the more stringent category of work.</p> <p>SECTION AJ102 COMPLIANCE</p> <p>AJ102.1 General. Regardless of the category of work being performed, the <u>The</u> work shall not cause the structure to become unsafe or adversely affect the performance of the building; shall not cause an existing mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded; and unless expressly permitted by these provisions, shall not make the building any less compliant with this code or to any previously <i>approved</i> alternative arrangements than it was before the work was undertaken.</p> <p>AJ102.2 Requirements by category of work. Repairs shall conform to the requirements of Section AJ107. Renovations shall conform to the requirements of Section AJ108. Alterations shall conform to the requirements of Section AJ109 and the requirements for renovations. Reconstructions shall conform to the requirements of Section AJ110 and the requirements for alterations and renovations.</p> <p>AJ102.2 AJ102.3 <u>Smoke detectors alarms.</u> Regardless of the category of work, smoke detectors <u>Smoke alarms</u> shall be provided where required by Section R314.2.2.</p> <p><u>AJ102.3 Carbon monoxide alarms.</u> Carbon monoxide alarms shall be provided where required by Section R315.2.2.</p> <p>AJ102.4 Replacement windows. Regardless of the category of work, where <u>Where</u> an existing window, including the sash and glazed portion, or safety glazing is replaced, the replacement</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>window or safety glazing shall comply with the requirements of Sections AJ102.4.1 through AJ102.4.4, as applicable.</p> <p>AJ102.4.1 Energy efficiency. Replacement windows shall comply with the requirements of Chapter 11.</p> <p>AJ102.4.2 Safety glazing. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of Section R308.</p> <p>AJ102.4.3 Replacement windows for emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings, replacement windows shall be exempt from Sections R310.2 and R310.4.4 provided that the replacement window meets the following conditions:</p> <ol style="list-style-type: none"> 1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window. 2. Where the replacement window is not part of a change of occupancy. <p>Window opening control devices and fall prevention devices complying with ASTM F2090 shall be permitted for use on windows serving as required emergency escape and rescue openings.</p> <p>AJ102.4.3.1 Control Window opening control devices and fall protection device height. Emergency escape and rescue openings with window opening control devices or fall prevention devices shall be located at a height in accordance with Section R310.1.1 or at as low a height as can be installed within the existing clear opening, complying with ASTM F2090, after operation to release the control device allowing the window to fully open, shall not reduce the net clear opening area of the window unit. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.</p> <p>AJ102.4.4 Window control devices fall protection. Window fall protection shall be installed in accordance with Section R312.2. Window opening control devices or fall prevention devices complying with ASTM F2090 shall be installed where an existing</p>					

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	<p>window is replaced and where all of the following apply to the replacement window:</p> <ol style="list-style-type: none"> 1. The window is operable. 2. One of the following applies: <ol style="list-style-type: none"> 2.1. The window replacement includes replacement of the sash and the frame. 2.2. The window replacement includes the sash only when the existing frame remains. 3. The bottom of the clear opening of the window opening is at a height less than 24 inches (610 mm) above the finished floor. 4. The window will permit openings that will allow passage of a 4-inch diameter (102 mm) sphere where the window is in its largest opened position. 5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm). <p>AJ102.5 Flood hazard areas. Work performed in existing buildings located in a flood hazard area as established by Table R301.2 shall be subject to the provisions of Section R105.3.1.1.</p> <p>AJ102.6 Equivalent alternatives. Work performed in accordance with the <i>International Existing Building Code</i> shall be deemed to comply with the provisions of this appendix. These provisions are not intended to prevent the use of any alternative material, alternative design or alternative method of construction not specifically prescribed herein, provided that any alternative has been deemed to be equivalent and its use authorized by the <i>building official</i>.</p> <p>AJ102.7 Other alternatives. Where compliance with these provisions or with this code as required by these provisions is technically infeasible or would impose disproportionate costs because of construction or dimensional difficulties, the building official shall have the authority to accept alternatives. These alternatives include materials, design features and operational features.</p> <p>AJ102.7 AJ102.8 More restrictive requirements. Buildings or systems in compliance with the requirements of this code for new construction shall not be required to comply with any more restrictive requirement of these provisions.</p>					

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	<p>AJ102.9 Features exceeding code requirements. Elements, components and systems of existing buildings with features that exceed the requirements of this code for new construction, and are not otherwise required as part of <i>approved</i> alternative arrangements or deemed by the <i>building official</i> to be required to balance other building elements not complying with this code for new construction, shall not be prevented by these provisions from being modified as long as they remain in compliance with the applicable requirements for new construction.</p> <p>SECTION AJ103 PRELIMINARY MEETING</p> <p>AJ103.1 General. If a building <i>permit</i> is required at the request of the prospective <i>permit</i> applicant, the <i>building official</i> or his or her designee shall meet with the prospective applicant to discuss plans for any proposed work under these provisions prior to the application for the <i>permit</i>. The purpose of this preliminary meeting is for the <i>building official</i> to gain an understanding of the prospective applicant's intentions for the proposed work, and to determine, together with the prospective applicant, the specific applicability of these provisions.</p> <p>SECTION AJ104 EVALUATION OF AN EXISTING BUILDING</p> <p>AJ104.1 General. The <i>building official</i> shall have the authority to require an existing building to be investigated and evaluated by a <i>registered design professional</i> in the case of proposed reconstruction of any portion of a building. The evaluation shall determine the existence of any potential nonconformities to these provisions, and shall provide a basis for determining the impact of the proposed changes on the performance of the building. The evaluation shall use the following sources of information, as applicable:</p> <ol style="list-style-type: none"> 1. Available documentation of the existing building. <ol style="list-style-type: none"> 1.1. Field surveys. 1.2. Tests (nondestructive and destructive). 1.3. Laboratory analysis. <p>Exception: Detached one or two family dwellings that are not irregular buildings under Section R301.2.2.6 and are not undergoing an extensive reconstruction shall not be required to be evaluated.</p>					

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	<p>SECTION AJ103AJ106 DEFINITIONS</p> <p>AJ103.1AJ106.1 General. For purposes of this appendix, the terms used are defined as follows: <u>The terms used in this appendix, and not provided in Chapter 2 of the International Residential Code, are defined as follows:</u></p> <p>ALTERATION. The reconfiguration of any space; the addition or elimination of any door or window; the reconfiguration or extension of any system; or the installation of any additional equipment</p> <p>CATEGORIES OF WORK. The nature and extent of construction work undertaken in an existing building. The categories of work covered in this appendix, listed in increasing order of stringency of requirements, are <i>repair</i>, renovation, <i>alteration</i> and reconstruction.</p> <p>DANGEROUS. <u>Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:</u> <u>Where the stresses in any member; the condition of the building, or any of its components or elements or attachments; or other condition that results in an overload exceeding 150 percent of the stress allowed for the member or material in this code.</u></p> <ol style="list-style-type: none"> <u>1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground.</u> <u>2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or ornamentation of the building or structure under permanent, routine or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake or other environmental loads when such loads are imminent.</u> <p>EQUIPMENT OR FIXTURE. Any plumbing, heating, electrical, ventilating, air conditioning, refrigerating and fire protection equipment; and elevators, dumb waiters, boilers, pressure vessels, and other mechanical facilities or installations that are related to building services.</p> <p>MATERIALS AND METHODS REQUIREMENTS. Those requirements in this code that specify material standards; details of installation and connection; joints; penetrations; and</p>					

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	<p>continuity of any element, component or system in the building. The required quantity, fire resistance, flame spread, acoustic or thermal performance, or other performance attribute is specifically excluded from materials and methods requirements.</p> <p>RECONSTRUCTION. The reconfiguration of a space that affects an exit, a renovation or alteration where the work area is not permitted to be occupied because existing means of egress and fire protection systems, or their equivalent, are not in place or continuously maintained; or there are extensive alterations as defined in Section AJ109.3.</p> <p>REHABILITATION. Any repair, renovation, alteration or reconstruction work undertaken in an existing building.</p> <p>RENOVATION. The change, strengthening or addition of load-bearing elements; or the refinishing, replacement, bracing, strengthening, upgrading or extensive repair of existing materials, elements, components, equipment or fixtures. Renovation does not involve reconfiguration of spaces. Interior and exterior painting are not considered refinishing for purposes of this definition, and are not renovation.</p> <p>REPAIR. The patching, restoration or minor replacement of materials, elements, components, equipment or fixtures for the purposes of maintaining those materials, elements, components, equipment or fixtures in good or sound condition.</p> <p>WORK AREA. That portion of a building affected by any renovation, alteration or reconstruction work as initially intended by the owner and indicated as such in the permit. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed, and portions of the building where work not initially intended by the owner is specifically required by these provisions for a renovation, alteration or reconstruction.</p> <p>SECTION AJ104AJ107 REPAIRS</p> <p>AJ104.1 General. Repairs shall comply with the applicable provisions of the <u>International Residential Code</u> for new construction or as permitted by this appendix.</p> <p>AJ104.2AJ107.1 Materials. Except as otherwise required herein, <u>repairs</u> work shall be done using like materials or materials permitted by this code for new construction.</p>					

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	<p>AJ104.2.1AJ107.1.1 Hazardous materials. Hazardous materials no longer permitted, such as asbestos and lead-based paint, shall not be used.</p> <p>AJ104.1.2AJ107.1.2 Plumbing materials and supplies. The following plumbing materials and supplies shall not be used:</p> <ol style="list-style-type: none"> 1. All-purpose solvent cement, unless <i>listed</i> for the specific application. 2. Flexible traps and tailpieces, unless <i>listed</i> for the specific application. 3. Solder having more than 0.2-percent lead in the repair of potable water systems. <p>AJ104.3AJ107.2 Water closets. Where any water closet is replaced with a newly manufactured water closet, the replacement water closet shall comply with the requirements of Section P2903.2.</p> <p>AJ104.4AJ107.3 Electrical. Repair or replacement of existing electrical wiring and equipment undergoing repair with like material shall be permitted. shall comply with Chapters 34 through 43.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Replacement of electrical receptacles shall comply with the requirements of Chapters 34 through 43. 2. Plug fuses of the Edison base type shall be used for replacements only where there is not evidence of overfusing or tampering in accordance with the applicable requirements of Chapters 34 through 43. 3. For replacement of nongrounding-type receptacles with grounding-type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system, or to any accessible point on the grounding electrode conductor, as allowed and described in Chapters 34 through 43. <p>SECTION AJ108 RENOVATIONS</p> <p>AJ108.1 Materials and methods. The work shall comply with the materials and methods requirements of this code.</p> <p>AJ108.2 Door and window dimensions. Minor reductions in the clear opening dimensions of replacement doors and windows</p>					

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	<p>that result from the use of different materials shall be allowed, whether or not they are permitted by this code.</p> <p>AJ108.3 Interior finish. Wood paneling and textile wall coverings used as an interior finish shall comply with the flame spread requirements of Section R302.9.</p> <p>SECTION AJ105AJ109 ALTERATIONS</p> <p>AJ105.1 General. <u>Alterations to existing buildings shall comply with the provisions of this code for new construction, except as permitted by Sections AJ105.2 through AJ105.8. Engineered design in accordance with Section R301.1.3 shall be permitted to meet the requirements of this section. Alterations shall not cause the existing building to become less compliant with the provisions of this code for new construction than the existing building was prior to the work.</u></p> <p>AJ105.2AJ109.1 Newly constructed elements. Newly constructed elements, components and systems shall comply with the requirements of this code.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Added openable windows are not required to comply with the light and <i>ventilation</i> requirements of Section R303. Newly installed electrical equipment shall comply with the requirements of Section AJ109.5 AJ105.5. <p>AJ105.3AJ109.2 Nonconformities. The work shall not increase the extent of noncompliance with the requirements of Section AJ110, or create nonconformity to those requirements that did not previously exist.</p> <p>AJ109.3 Extensive alterations. Where the total area of all of the work areas included in an <i>alteration</i> exceeds 50 percent of the area of the <i>dwelling unit</i>, the work shall be considered to be a reconstruction and shall comply with the requirements of these provisions for reconstruction work.</p> <p>Exception: Work areas in which the <i>alteration</i> work is exclusively plumbing, mechanical or electrical shall not be included in the computation of the total area of all work areas.</p> <p>AJ105.4AJ109.4 Structural. <u>Altered structural elements and systems shall comply with Section R102.7.1 and the structural provisions of this appendix. The minimum design loads for the structure shall be the loads applicable at the time the building</u></p>					

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	<p>was constructed, provided that a dangerous condition is not created. Structural elements that are uncovered during the course of the alteration and that are found to be unsound or dangerous shall be made to comply with the applicable requirements of this code.</p> <p><u>AJ105.4.1AJ108.4</u> Structural Unreinforced masonry walls. Unreinforced masonry buildings located in Seismic Design Category D₂ or E shall have parapet bracing and wall anchors installed at the roofline whenever a <i>reroofing permit</i> is issued. Such parapet bracing and wall anchors shall be of an <i>approved</i> design.</p> <p><u>AJ105.5AJ109.5</u> Electrical equipment and wiring. Electrical equipment and wiring shall comply with this section.</p> <p><u>AJ105.5.1AJ109.5.1</u> Materials and methods. Newly installed electrical equipment and wiring relating to work done in any work area, including in newly installed partitions and ceilings, shall comply with the materials and methods requirements of Chapters 34 through 43.</p> <p>Exception: Electrical equipment and wiring in newly installed partitions and ceilings shall comply with the applicable requirements of Chapters 34 through 43.</p> <p><u>AJ105.5.2AJ109.5.2</u> Electrical service. Service to the <i>dwelling unit</i> shall be not less than 100 ampere, three-wire capacity and service <i>equipment</i> shall be dead front having no live parts exposed that could allow accidental contact. Type “S” fuses shall be installed where fused equipment is used.</p> <p>Exception: Existing service of 60 ampere, three-wire capacity, and feeders of 30 ampere or larger two- or three-wire capacity shall be accepted if adequate for the electrical load being served.</p> <p><u>AJ105.5.3AJ109.5.3</u> Additional electrical requirements. Where the work area includes any of the following areas within a <i>dwelling unit</i>, the requirements of Sections AJ109.5.3.1 <u>AJ105.5.3.1</u> through AJ109.5.3.5 <u>AJ105.5.3.5</u> shall apply.</p> <p><u>AJ105.5.3.1AJ109.5.3.1</u> Enclosed areas. Enclosed areas other than closets, kitchens, <i>basements</i>, garages, hallways, laundry areas and bathrooms shall have not less than two duplex receptacle outlets, or one duplex receptacle outlet and one ceiling- or wall-type lighting outlet.</p>					

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	<p>AJ105.5.3.2AJ109.5.3.2 Kitchen and laundry areas. Kitchen areas shall have not less than two duplex receptacle outlets. Laundry areas shall have not less than one duplex receptacle outlet located near the laundry equipment and installed on an independent <u>branch</u> circuit.</p> <p>AJ105.5.3.3AJ109.5.3.3—Ground-fault circuit interruption. Ground-fault circuit interruption shall be provided on newly installed receptacle outlets if required by Chapters 34 through 43.</p> <p>AJ105.5.3.4AJ109.5.3.4—Lighting outlets. Not less than one lighting outlet <u>controlled by a listed wall-mounted device</u> shall be provided in every bathroom, hallway, <i>stairway</i>, attached garage and detached garage with electric power to illuminate outdoor entrances and exits, and in utility rooms and <i>basements</i> where these spaces are used for storage or contain equipment requiring service. <u>The wall-mounted control device shall be located near an entrance to the room.</u></p> <p>AJ105.5.3.5AJ109.5.3.5—Clearance. Clearance for electrical service equipment shall be provided in accordance with Chapters 34 through 43.</p> <p>AJ105.6AJ109.6—Ventilation. Reconfigured spaces intended for occupancy and spaces converted to habitable or occupiable space in any work area shall be provided with <i>ventilation</i> in accordance with Section R303.</p> <p>AJ105.7AJ109.7—Ceiling height. Habitable spaces created in existing basements shall have <u>Where a habitable attic or habitable space is created in an existing building,</u> ceiling heights shall not be of not less than 6 feet, 8 inches (2032 mm). , except that the ceiling height at obstructions shall be not less than 6 feet 4 inches (1930 mm) from the basement floor. Existing finished ceiling heights in nonhabitable spaces in basements shall not be reduced. Bathrooms, toilet rooms, and laundry rooms shall have a ceiling height of not less than 6 feet 4 inches (1930 mm).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <u>For rooms with sloped ceilings, the required floor area of the room shall have a ceiling height of not less than 5 feet (1524 mm), and not less than 50 percent of the required floor area shall have a ceiling height of not less than 6 feet 8 inches (2134 mm).</u> 					

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	<p><u>2. At beams, girders, ducts, or other obstructions, the ceiling height shall be not less than 6 feet 4 inches (1931 mm) from the finished floor.</u></p> <p>AJ105.8.1AJ109.8 Stairs, handrails, and guards. <u>Stairs, handrails, and guards shall comply with this section.</u></p> <p>AJ105.8.1AJ109.8.1 Stair width. Existing <i>basement</i> stairs and <i>handrails</i> not otherwise being altered or modified shall be permitted to maintain their current clear width at, above and below existing <i>handrails</i>.</p> <p>AJ105.8.2AJ109.8.2 Stair headroom. Headroom height on existing <i>basement</i> stairs being altered or modified shall not be reduced below the existing <i>stairway</i> finished headroom. Existing <i>basement</i> stairs not otherwise being altered shall be permitted to maintain the current finished headroom.</p> <p>AJ105.8.3AJ109.8.3 Stair landing. Landings serving existing <i>basement</i> stairs being altered or modified shall not be reduced below the existing <i>stairway</i> landing depth and width. Existing <i>basement</i> stairs not otherwise being altered shall be permitted to maintain the current landing depth and width.</p> <p>AJ105.8.4 Stair treads and riser. <u>An existing stairway shall not be required to comply with Section R311.7.5 where the existing space and construction does not allow a reduction in pitch or slope. Where risers are added to an existing stair, the tread and riser dimension of the added risers shall match the existing stair.</u></p> <p>AJ105.8.5 Stairway Illumination. <u>Stairways within the work area shall be provided with illumination in accordance with Section R303.6.</u></p> <p>AJ105.8.6 Handrails and Guards. <u>If a stair or any portion of a stair is altered, a handrail and guard, where required, shall be provided in accordance with Section R311 and R312.</u></p> <p>SECTION AJ106 ADDITIONS</p> <p>AJ106.1 General. <u>Where the existing building with an addition is within the scope of the International Residential Code, the addition shall comply with the applicable provisions of the International Residential Code for new construction or as permitted by this appendix.</u></p> <p>SECTION AJ107 RELOCATED BUILDINGS</p> <p>AJ107.1 General. <u>Residential buildings or structures moved into or within the jurisdiction are not required to comply with the</u></p>					

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	<p><u>requirements for new construction under the International Residential Code provided they comply with all of the following conditions:</u></p> <ol style="list-style-type: none"> <u>The building shall be safe for human occupancy as determined by the International Fire Code and the International Property Maintenance Code.</u> <u>Any repair, alteration or change of use undertaken within the relocated structure shall comply with the requirements of this code applicable to the work being performed.</u> <u>Any field fabricated elements shall comply with the applicable requirements of this code.</u> <p>SECTION AJ110 RECONSTRUCTION</p> <p>AJ110.1 Stairways, handrails and guards.</p> <p>AJ110.1.1 Stairways. Stairways within the work area shall be provided with illumination in accordance with Section R303.7.</p> <p>AJ110.1.2 Handrails. Every required exit stairway that has four or more risers, is part of the means of egress for any work area, and is not provided with not fewer than one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails designed and installed in accordance with Section R311 for the full length of the run of steps on not less than one side.</p> <p>AJ110.1.3 Guards. Every open portion of a stair, landing or balcony that is more than 30 inches (762 mm) above the floor or grade below, is part of the egress path for any work area, and does not have guards, or in which the existing guards are judged to be in danger of collapsing, shall be provided with guards designed and installed in accordance with Section R312.</p> <p>AJ110.2 Wall and ceiling finish. The interior finish of walls and ceilings in any work area shall comply with the requirements of Section R302.9. Existing interior finish materials that do not comply with those requirements shall be removed or shall be treated with an approved fire retardant coating in accordance with the manufacturer's instructions to secure compliance with the requirements of this section.</p> <p>AJ110.3 Separation walls. Where the work area is in an attached dwelling unit, walls separating dwelling units that are not continuous from the foundation to the underside of the roof sheathing shall be constructed to provide a continuous fire separation using construction materials consistent with the</p>					

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	<p>existing wall or complying with the requirements for new structures. Performance of work shall be required only on the side of the wall of the <i>dwelling unit</i> that is part of the work area.</p> <p>AJ110.4 Ceiling height. <i>Habitable spaces</i> created in existing <i>basements</i> shall have ceiling heights of not less than 6 feet, 8 inches (2032 mm), except that the ceiling height at obstructions shall be not less than 6 feet 4 inches (1930 mm) from the <i>basement</i> floor. Existing finished ceiling heights in nonhabitable spaces in <i>basements</i> shall not be reduced.</p> <p>SECTION AJ111 <u>AJ108</u> REFERENCED STANDARDS</p> <p>AJ111.1 <u>AJ108.1</u> General. See Table AJ111.1 <u>AJ108.1</u> for standards that are referenced in various sections of this appendix. Standards are listed by the standard identification with the effective date, the standard title and the section or sections of this appendix that reference the standard.</p> <p>TABLE AJ111.1 <u>AJ108.1</u> REFERENCED STANDARDS</p> <table border="1"> <thead> <tr> <th>STANDARD ACRONYM</th> <th>STANDARD NAME</th> <th>SECTION HEREIN REFERENCED</th> </tr> </thead> <tbody> <tr> <td>ASTM F2090-17</td> <td><u>Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms</u></td> <td><u>AJ102.4.3, AJ102.4.4</u></td> </tr> <tr> <td>IEBC-21_24</td> <td><u>International Existing Building Code</u></td> <td>AJ102.6</td> </tr> <tr> <td>IFC-24</td> <td><u>International Fire Code</u></td> <td><u>AJ107.1</u></td> </tr> <tr> <td>IPMC-24</td> <td><u>International Property Maintenance Code</u></td> <td><u>AJ107.1</u></td> </tr> </tbody> </table>	STANDARD ACRONYM	STANDARD NAME	SECTION HEREIN REFERENCED	ASTM F2090-17	<u>Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms</u>	<u>AJ102.4.3, AJ102.4.4</u>	IEBC-21_24	<u>International Existing Building Code</u>	AJ102.6	IFC-24	<u>International Fire Code</u>	<u>AJ107.1</u>	IPMC-24	<u>International Property Maintenance Code</u>	<u>AJ107.1</u>				
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RB8-22	<p>Revise as follows:</p> <p>R102.7.1 Additions, alterations, <u>change of use</u>, or repairs. <i>Additions, alterations</i> or repairs to any structure shall conform to the requirements for a new structure without requiring the existing structure to comply with the requirements of this code, unless otherwise stated. <i>Additions, alterations</i>, repairs and relocations shall not cause an existing structure to become less compliant with the provisions of this code than the existing building or structure was prior to the <i>addition, alteration</i> or <i>repair</i>. An existing building together with its <i>additions</i> shall comply with the height limits of this code. Where the <i>alteration</i> causes the use or occupancy to be changed to one not within the scope of this code, the provisions of the <i>International Existing Building Code</i> shall apply. <u>Where additions, alterations, or changes of use to an existing structure result in a use or occupancy, height, or means of egress outside the scope of this code, the building shall comply with the International Existing Building Code.</u></p>		X			Clarification.
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Sub Code:						
	<p>Delete without substitution: R110.2 Change in use. Changes in the character or use of an existing structure shall not be made except as specified in Sections 506 and 507 of the International Existing Building Code.</p>					
RB14-22	<p>Revise as follows: R105.2 Work exempt from permit. Exemption from <i>permit</i> requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this <i>jurisdiction</i>. <i>Permits</i> shall not be required for the following: (Only changes listed) Building: 10. Decks not exceeding 200 square feet (18.58 m²) in area, that are not more than 30 inches (762 mm) above <i>grade</i> at any point, are not attached to a <i>dwelling</i> or <i>townhouse</i> and do not serve the exit door required by Section R311.4. [RB] ACCESSORY STRUCTURE. A structure that is accessory to and incidental to that of the <i>dwelling(s)</i> or <i>townhouse(s)</i> and that is located on the same <i>lot</i>. R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of <i>dwellings</i>, <i>townhouses</i>, and accessory buildings shall comply with Table R302.1(1); or <i>dwellings</i> and <i>townhouses</i> equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section P2904 shall comply with Table R302.1(2). Exceptions: 1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the <i>fire separation distance</i>. 2. Walls of <i>individual dwelling units</i> and their <i>accessory structures</i> located on the same <i>lot</i>. 3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from <i>permits</i> are not required to provide wall protection based on location on the <i>lot</i>. Projections beyond the exterior wall shall not extend over the <i>lot line</i>. 4. Detached garages accessory to a <i>dwelling unit</i> located within 2 feet (610 mm) of a <i>lot line</i> are permitted to have roof eave projections not exceeding 4 inches (102 mm).</p>		X			Clarification.

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		Decrease	Neutral	Increase		

Sub Code:

5. Foundation vents installed in compliance with this code are permitted.

TABLE R302.1(2) EXTERIOR WALLS—DWELLINGS AND TOWNHOUSES WITH FIRE SPRINKLERS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the International Building Code with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet ^a
Projections	Not allowed	NA	< 2 feet
	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood ^{d, c}	2 feet ^a
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	NA	< 3 feet
	Unlimited	0 hours	3 feet ^a
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet ^a

For SI: 1 foot = 304.8 mm. NA = Not Applicable.

- a. For residential subdivisions where all dwellings and/or townhouses are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, the fire separation distance for exterior walls not fire-resistance rated and for fire-resistance-rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.
- b. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave overhang if fire blocking is provided from the wall top plate to the underside of the roof sheathing.
- c. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where gable vent openings are not installed.

R302.5 Dwelling unit-garage opening and penetration protection. Openings and penetrations through the walls or ceilings separating the *dwelling unit* from the garage shall be in accordance with Sections R302.5.1 through R302.5.3.

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and *dwelling*

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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Sub Code:																
	<p><u>unit</u> residence shall be equipped with solid wood doors not less than 1³/₈ inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 1³/₈ inches (35 mm) thick, or 20-minute fire-rated doors. Doors shall be self-latching and equipped with a self-closing or automatic-closing device.</p> <p>R302.5.2 Duct penetration. Ducts in the garage and ducts penetrating the walls or ceilings separating the <i>dwelling unit</i> from the garage shall be constructed of a minimum No. 26 gage (0.48 mm) sheet steel or other <i>approved</i> material and shall not have openings into the garage.</p> <p>R302.6 Dwelling unit-garage fire separation. The garage shall be separated as required by Table R302.6. Openings in garage walls shall comply with Section R302.5. Attachment of gypsum board shall comply with Table R702.3.5. The wall separation provisions of Table R302.6 shall not apply to garage walls that are perpendicular to the adjacent <i>dwelling unit</i> wall.</p> <p>TABLE R302.6 DWELLING UNIT-GARAGE SEPARATION</p> <table border="1"> <thead> <tr> <th>SEPARATION</th> <th>MATERIAL</th> </tr> </thead> <tbody> <tr> <td>From the <i>dwelling unit</i> residence and attic</td> <td>Not less than 1/2-inch gypsum board or equivalent applied to the garage side</td> </tr> <tr> <td>From habitable rooms above the garage</td> <td>Not less than 5/8-inch Type X gypsum board or equivalent</td> </tr> <tr> <td>Structure(s) supporting floor/ceiling assemblies used for separation required by this section</td> <td>Not less than 1/2-inch gypsum board or equivalent</td> </tr> <tr> <td>Garages located less than 3 feet from a dwelling unit on the same lot</td> <td>Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.</p> <p>R302.3 Two-family dwellings. <i>Dwelling units</i> in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the International Building Code. Such separation shall be provided regardless of whether a <i>lot line</i> exists between the two <i>dwelling units</i> or not. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. A fire-resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904. 2. Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8-inch (15.9 mm) Type X gypsum board, an attic draft stop constructed 	SEPARATION	MATERIAL	From the <i>dwelling unit</i> residence and attic	Not less than 1/2-inch gypsum board or equivalent applied to the garage side	From habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent	Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent	Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area					
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Sub Code:						
	<p>as specified in Section R302.12.1 is provided above and along the wall assembly separating the <i>dwelling units</i> and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.</p> <p>R310.6 Dwelling additions. Where <i>dwelling unit additions</i> contain sleeping rooms, an <i>emergency escape and rescue opening</i> shall be provided in each new sleeping room. Where <i>dwelling unit additions</i> have <i>basements</i>, an <i>emergency escape and rescue opening</i> shall be provided in the new <i>basement</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. An <i>emergency escape and rescue opening</i> is not required in a new <i>basement</i> that contains a sleeping room with an <i>emergency escape and rescue opening</i>. 2. An <i>emergency escape and rescue opening</i> is not required in a new <i>basement</i> where there is an <i>emergency escape and rescue opening</i> in an existing <i>basement</i> that is <i>accessed</i> from the new <i>basement</i>. 3. An operable window complying with Section 310.7.1 shall be acceptable as an <i>emergency escape and rescue opening</i>. <p>R311.1 Means of egress. <i>Dwellings Dwelling units</i> shall be provided with a means of egress in accordance with this section. The means of egress shall provide a continuous and unobstructed path of vertical and horizontal egress travel from all portions of the <i>dwelling unit</i> to the required egress door without requiring travel through a garage. The required egress door shall open directly into a <i>public way</i> or to a <i>yard</i> or court that opens to a <i>public way</i>.</p> <p>R311.2 Egress door. Not less than one egress door shall be provided for each <i>dwelling unit</i>. The egress door shall be side-hinged, and shall provide a clear width of not less than 32 inches (813 mm) where measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). The clear height of the door opening shall be not less than 78 inches (1981 mm) in height measured from the top of the threshold to the bottom of the stop. Other doors shall not be required to comply with these minimum dimensions. Egress doors shall be readily openable from inside the <i>dwelling unit</i> without the use of a key or special knowledge or effort.</p>					

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	<p>R314.3 Location. Smoke alarms shall be installed in the following locations:</p> <ol style="list-style-type: none"> 1. In each sleeping room. 2. Outside each separate sleeping area in the immediate vicinity of the bedrooms. 3. On each additional story of the <i>dwelling unit</i>, including <i>basements</i> and <i>habitable attics</i> and not including crawl spaces and uninhabitable <i>attics</i>. In <i>dwellings</i> or <i>dwelling units</i> with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full <i>story</i> below the upper level. 4. Not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by this section. 5. In the hallway and in the room open to the hallway in <i>dwelling units</i> where the ceiling height of a room open to a hallway serving bedrooms exceeds that of the hallway by 24 inches (610 mm) or more. <p>R320.2 Live/work units. In <i>live/work units</i>, the nonresidential portion shall be accessible in accordance with Sections 508.5.9 and 508.5.11 of the <i>International Building Code</i>. In a <i>building structure</i> where there are four or more <i>live/work units</i>, the <u>residential dwelling</u> portion of the <i>live/work unit</i> shall comply with Section 1108.6.2.1 of the <i>International Building Code</i>.</p> <p>R324.6.2.1 Alternative setback at ridge. Where an automatic sprinkler system is installed within the <i>dwelling or townhouse</i> in accordance with NFPA 13D or Section P2904, setbacks at ridges shall comply with one of the following:</p> <ol style="list-style-type: none"> 1. For photovoltaic arrays occupying not more than 66 percent of the plan view total roof area, not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge. 2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, not less than a 36-inch (914 mm) clear setback is required on both sides of a horizontal ridge. 					

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	<p>R324.6.3 Emergency escape and rescue openings. Panels and modules installed on dwellings <u>and townhouses</u> shall not be placed on the portion of a roof that is below an <i>emergency escape and rescue opening</i>. A pathway not less than 36 inches (914 mm) wide shall be provided to the <i>emergency escape and rescue opening</i>.</p> <p>Exception: BIPV systems <i>listed</i> in accordance with Section 690.12(B)(2) of NFPA 70, where the removal or cutting away of portions of the BIPV system during fire-fighting operations has been determined to not expose a fire fighter to electrical shock hazards.</p> <p>R801.3 Roof drainage. In areas where <i>expansive soils</i> or <i>collapsible soils</i> are known to exist, all <i>dwellings and townhouses</i> shall have a controlled method of water disposal from roofs that will collect and discharge roof drainage to the ground surface not less than 5 feet (1524 mm) from foundation walls or to an <i>approved</i> drainage system.</p> <p>R1006.2 Exterior air intake. The exterior air intake shall be capable of supplying all <i>combustion air</i> from the exterior of the <i>dwelling unit</i> or from spaces within the <i>dwelling unit</i> ventilated with outdoor air such as nonmechanically ventilated crawl or attic spaces. The exterior air intake shall not be located within the <i>garage</i> or <i>basement</i> of the <i>dwelling unit</i>. The exterior air intake, for other than <i>listed</i> factory-built fireplaces, shall not be located at an elevation higher than the firebox. The exterior air intake shall be covered with a corrosion-resistant screen of 1/4-inch (6.4 mm) mesh.</p>					
RB15-22	<p>Revise as follows: R104.2.1R105.3.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas. For applications for reconstruction, rehabilitation, <i>addition, alteration, repair</i> or other improvement of existing buildings or structures located in a flood hazard area as established by Table R301.2, the <i>building official</i> shall examine or cause to be examined the <i>construction documents</i> and shall make a determination with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its predamaged condition. If the <i>building official</i> finds that the value of proposed work equals or</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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Sub Code:						
	<p>exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the proposed work is a substantial improvement or <i>repair</i> of substantial damage and the building official shall require existing portions of the entire building or structure to meet the requirements of Section R322.</p> <p>For the purpose of this determination, a substantial improvement shall mean any <i>repair</i>, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or <i>repair</i> is started. Where the building or structure has sustained substantial damage, repairs necessary to restore the building or structure to its predamaged condition shall be considered substantial improvements regardless of the actual repair work performed. The term shall not include either of the following:</p> <ol style="list-style-type: none"> 1. Improvements to a building or structure that are required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to ensure safe living conditions. 2. Any <i>alteration</i> of a <i>historic building</i> or structure, provided that the <i>alteration</i> will not preclude the continued designation as a <i>historic building</i> or structure. For the purposes of this exclusion, a <i>historic building</i> shall be any of the following: <ol style="list-style-type: none"> 2.1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places. 2.2. Determined by the Secretary of the US Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district. 2.3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior. <p>R322.3.1 Location and site preparation. New buildings and buildings that are determined to be substantially improved pursuant to Section <u>R104.2.1</u> R105.3.1.1 shall be located landward of the reach of mean high tide. For any alteration of sand dunes and mangrove stands, the building</p>					

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	<p>official shall require submission of an engineering analysis that demonstrates that the proposed alteration will not increase the potential for flood damage.</p> <p>AJ102.5 Flood hazard areas. Work performed in existing buildings located in a flood hazard area as established by Table R301.2 shall be subject to the provisions of Section R104.2.1R105.3.1.1.</p>					
RB16-22	<p>Revise as follows:</p> <p>R105.3.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas. For applications for reconstruction, rehabilitation, <i>addition, alteration, repair</i> or other improvement of existing buildings or structures located in a flood hazard area as established by Table R301.2, the <i>building official</i> shall examine or cause to be examined the <i>construction documents</i> and shall make a determination with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its predamaged condition. If the <i>building official</i> finds that the value of proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the proposed work is a substantial improvement or <i>repair</i> of substantial damage and the building official shall require existing portions of the entire building or structure to meet the requirements of Section R322.</p> <p>For the purpose of this determination, a substantial improvement shall mean any <i>repair, reconstruction, rehabilitation, addition</i> or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or <i>repair</i> is started. Where the building or structure has sustained substantial damage, repairs necessary to restore the building or structure to its predamaged condition shall be considered substantial improvements regardless of the actual repair work performed. The term shall not include either of the following:</p> <p>1. Improvements to a building or structure that are required to correct existing health, sanitary or safety code violations</p>		X			Editorial.

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	<p>identified by the building official and that are the minimum necessary to ensure safe living conditions.</p> <p>2. Any alteration of a historic building or structure, provided that the alteration will not preclude the continued designation as a historic building or structure. For the purposes of this exclusion, a historic building shall be any of the following:</p> <p>3. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places.</p> <p>4. Determined by the Secretary of the US Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district.</p> <p>5. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.</p>					
RB20-22	<p>Revise as follows: R902.3 Building-integrated photovoltaic (BIPV) product systems. <i>Building-integrated photovoltaic (BIPV) products systems</i> installed as the roof covering shall be tested, <i>listed</i> and <i>labeled</i> for fire classification in accordance with UL 7103. Class A, B or C BIPV products shall be installed where the edge of the roof is less than 3 feet (914 mm) from a <i>lot line</i>.</p>		X			Clarification.
RB27-22	<p>Revise as follows: R324.7 Ground-mounted photovoltaic (PV) panel systems. Ground-mounted photovoltaic (PV) panel systems shall be designed and installed in accordance with Section R301.</p>		X			Clarification.
RB28-22	<p>Revise as follows: TABLE R702.7(3) CLASS III VAPOR RETARDERS Portions of table not shown remain unchanged. a. Vented cladding shall include vinyl, polypropylene, or horizontal aluminum siding, brick veneer with a clear airspace as specified in Table R703.8.4(1), <u>rainscreen systems</u> and other approved vented claddings.</p>		X			Adds design option.
RB34-22	<p>Summary of ASCE 7-22 coordination changes in IRC: Figure R301.2(2) Ultimate design wind speed: This section updates the basic wind speed map for the 700 MRI map (Risk Category II) for the contiguous United States and Alaska, as well as the Notes, to match what is in ASCE/SEI 7-22. The pointer to the ASCE Wind Design Geodatabase is added for Hawaii, US</p>			X	Cost increases along the hurricane coastline, while in the	Editorial.

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	<p>Virgin Islands, and Puerto Rico, and because maps for these three areas are no longer produced in ASCE/SEI 7-22, the maps have been removed from the IBC and are not replaced.</p> <p>Figure R301.2.1 Component and Cladding Pressure Zones. The zones for roof design have been simplified, see the changes in the Plan View diagrams. The corresponding simplification is updated in Table R301.2.1(1).</p> <p>Table R301.2.1(2) Height and Exposure Adjustment Coefficients. Vales for exposure B at 40 feet and above have been slightly reduced.</p> <p>Figure R301.2.1.1 Regions where wind design is required. This figure has been updated with the new base map from ASCE 7-22.</p> <p>Section R302.2.1.5 Topographic wind effects. The designated conditions identified in 3., and in 4., were removed from the requirements in ASCE 7-22.</p>				Gulf Coast area of the Florida Panhandle higher design wind speeds required.	
RB35-22	<p>Revise as follows:</p> <p>Figure R301.2(2) Ultimate design wind speed: This section updates the basic wind speed map for the 700 MRI map (Risk Category II) for the contiguous United States and Alaska, as well as the Notes, to match what is in ASCE/SEI 7-22. The pointer to the ASCE Wind Design Geodatabase is added for Hawaii, US Virgin Islands, and Puerto Rico, and because maps for these three areas are no longer produced in ASCE/SEI 7-22, the maps have been removed from the IBC and are not replaced.</p> <p>Figure R301.2.1 Component and Cladding Pressure Zones. The zones for roof design have been simplified, see the changes in the Plan View diagrams. The corresponding simplification is updated in Table R301.2.1(1).</p> <p>Table R301.2.1(2) Height and Exposure Adjustment Coefficients. Vales for exposure B at 40 feet and above have been slightly reduced.</p> <p>Figure R301.2.1.1 Regions where wind design is required. This figure has been updated with the new base map from 7-22.</p> <p>Section R302.2.1.5 Topographic wind effects. The designated conditions identified in 3., and in 4., were removed from the requirements in ASCE 7-22.</p>			X	Cost increases along the hurricane coastline, while in the Gulf Coast area of the Florida Panhandle higher design wind speeds required.	Editorial.

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Sub Code:										
RB42-22	<p>Revise as follows:</p> <p>R301.2.4 Floodplain construction. Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2, and substantial improvement and <i>repair</i> of substantial damage of buildings and structures <u>located in whole or in part</u> in flood hazard areas, shall be designed and constructed in accordance with Section R322. Buildings and structures that are located in more than one flood hazard area, <u>including A Zones, Coastal A Zones, and V Zones</u>, shall comply with the provisions associated with the most restrictive flood hazard area. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.</p> <p>R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas, including A or V Zones and Coastal A Zones, as established in Table R301.2, and substantial improvement and <i>repair</i> of substantial damage of buildings and structures <u>located in whole or in part</u> in flood hazard areas, shall be designed and constructed in accordance with the provisions contained in this section. Buildings and structures that are located in more than one flood hazard area, <u>including A Zones, Coastal A Zones, and V Zones</u>, shall comply with the provisions associated with the most restrictive flood hazard area. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.</p>		X			Clarification.				
RB44-22	<p>Revise as follows:</p> <p>TABLE R301.7 ALLOWABLE DEFLECTION OF STRUCTURAL MEMBERS^{b, c}</p> <p>Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">STRUCTURAL MEMBER</th> <th style="width: 50%;">ALLOWABLE DEFLECTION</th> </tr> </thead> <tbody> <tr> <td>All other structural members <u>excluding guards and handrails</u></td> <td align="center">L/240</td> </tr> </tbody> </table>	STRUCTURAL MEMBER	ALLOWABLE DEFLECTION	All other structural members <u>excluding guards and handrails</u>	L/240		X		May decrease cost in some cases.	Clarification.
STRUCTURAL MEMBER	ALLOWABLE DEFLECTION									
All other structural members <u>excluding guards and handrails</u>	L/240									
RB45-22	<p>Revise as follows:</p> <p>R301.9 Framing Member Splices. Splices in floor, ceiling, or roof framing members shall occur over vertical supports or shall be designed by a registered design professional in accordance with Section R301.1.3. Purlins, purlin braces, and collar ties shall not be considered a vertical support for determining splice locations.</p>		X			Clarification.				

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>R502.3 Allowable joist spans. Spans for floor joists shall be in accordance with Tables R502.3.1(1) and R502.3.1(2). For other grades and species and for other loading conditions, refer to the AWC STJR. Joist splices shall comply with Section R301.9. <u>occur over vertical supports or shall be designed in accordance with R301.1.3.</u></p> <p>R802.4.1 Rafter size. Rafters shall be sized based on the rafter spans in Tables R802.4.1(1) through R802.4.1(8). Rafter spans shall be measured along the horizontal projection of the rafter. For other grades and species and for other loading conditions, refer to the AWC STJR. Joist Rafter splices shall comply with Section R301.9. <u>occur over vertical supports or shall be designed in accordance with R301.1.3. Purlins, purlin braces, and collar ties shall not be considered a vertical support for determining splice locations.</u></p> <p>R802.5 Ceiling joists. Ceiling joists shall be continuous across the structure or securely joined where they meet over interior partitions in accordance with Section R802.5.2.1. Ceiling joists shall be fastened to the top plate in accordance with Table R602.3(1). Rafter Ceiling joist splices shall comply with Section R301.9. <u>occur over vertical supports or shall be designed in accordance with R301.1.3.</u></p>					
RB47-22	<p>Revise as follows:</p> <p>R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of <i>dwelling</i>, <i>townhouses</i> and accessory buildings accessory structures shall comply with Table R302.1(1) <u>based on fire separation distance</u>; or <i>dwelling</i> and <i>townhouses</i> equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section P2904 shall comply with Table R302.1(2) <u>based on fire separation distance</u>. <u>For the purposes of determining fire separation distance, buildings dwelling and townhouses on the same lot shall be assumed to have an imaginary line between them. Where a new building dwelling or townhouse is to be erected on the same lot as an existing building dwelling or townhouse, the location of the assumed imaginary line with relation to the existing building shall be such that the existing building dwelling or townhouse meets requirements of this section.</u></p> <p>Exceptions:</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<ol style="list-style-type: none"> 1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the <i>fire separation distance</i>. 2. Walls of individual <i>dwelling units</i> and their <i>accessory buildings structures</i> that face each other and are located on the same <i>lot</i>. 3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from <i>permits</i> are not required to provide wall protection based on location on the <i>lot</i>. Projections beyond the exterior wall shall not extend over the <i>lot line</i>. 4. Detached garages accessory to a <i>dwelling or townhouse</i> located within 2 feet (610 mm) of a <i>lot line</i> are permitted to have roof eave projections not exceeding 4 inches (102 mm). 5. Foundation vents installed in compliance with this code are permitted. 					
RB48-22	<p>R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of <i>dwelling</i>s and accessory buildings shall comply with Table R302.1(1); or <i>dwelling</i>s equipped throughout with an <i>automatic sprinkler system</i> installed in accordance with Section P2904 shall comply with Table R302.1(2).</p> <p><u>Where a <i>lot line</i> exists between adjacent <i>townhouse units</i>, <i>fire separation distance</i> of exterior walls shall be measured to the lot line. Where a <i>lot lines line</i> <i>line</i> do does not exist between adjacent <i>townhouse units</i>, an imaginary line shall be assumed between the adjacent <i>townhouse units</i> for the purpose of determining and <i>fire separation distance</i> of exterior walls shall be measured to the imaginary line. <i>Fire separation distance</i> and requirements of Section R302.1 shall not apply to walls separating townhouse units that are required by Section R302.2.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the <i>fire separation distance</i>. 2. Walls of individual <i>dwelling units</i> and their <i>accessory structures</i> located on the same <i>lot</i>. 		X			Increased safety.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from <i>permits</i> are not required to provide wall protection based on location on the <i>lot</i>. Projections beyond the exterior wall shall not extend over the <i>lot line</i>.</p> <p>4. Detached garages accessory to a <i>dwelling</i> located within 2 feet (610 mm) of a <i>lot line</i> are permitted to have roof eave projections not exceeding 4 inches (102 mm).</p> <p>5. Foundation vents installed in compliance with this code are permitted.</p>					
RB51-22	<p>Revise as follows: TABLE R302.1(1) EXTERIOR WALLS Portions of table not shown remain unchanged. For SI: 1 foot = 304.8 mm. NA = Not Applicable. b. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where vent openings <u>which communicate with the attic</u> are not installed in the overhang or in any gable end walls that are common to attic areas <u>gable wall</u>.</p> <p>TABLE R302.1(2) EXTERIOR WALLS—DWELLINGS WITH FIRE SPRINKLERS Portions of table not shown remain unchanged. a. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where vent openings <u>which communicate with the attic</u> are not installed in the overhang or in any gable end walls that are common to attic areas <u>gable wall</u> .</p>		X			Clarification.
RB54-22	<p>Revise as follows: R302.2.2 Common walls. Common walls separating <i>townhouse units</i> shall be assigned a fire-resistance rating in accordance with Item 1 or 2 and shall be rated for fire exposure from both sides. Common walls shall extend to and be tight against the exterior sheathing of the exterior walls, or the inside face of exterior walls without stud cavities, and the underside of the roof sheathing. The common wall shared by two <i>townhouse units</i> shall be constructed without <u>openings</u>, plumbing or mechanical equipment, ducts or vents, other than water-filled fire sprinkler piping in the cavity of the common wall. Electrical installations shall be in accordance with Chapters 34 through 43. Penetrations of the</p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>membrane of common walls for electrical outlet boxes shall be in accordance with Section R302.4.</p> <ol style="list-style-type: none"> Where an automatic sprinkler system in accordance with Section P2904 is provided, the common wall shall be not less than a 1- hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the International Building Code. Where an automatic sprinkler system in accordance with Section P2904 is not provided, the common wall shall be not less than a 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the International Building Code. <p>Exception: Common walls are permitted to extend to and be tight against the inside of the exterior walls if the cavity between the end of the common wall and the exterior sheathing is filled with a minimum of two 2-inch nominal thickness wood studs.</p>					
RB58-22	<p>Revise as follows:</p> <p>R302.2.4 Parapets for townhouses. Parapets constructed in accordance with Section R302.2.5 shall be constructed for <i>townhouses</i> as an extension of exterior walls or common walls separating <i>townhouse units</i> in accordance with the following:</p> <ol style="list-style-type: none"> Where roof surfaces adjacent to the wall or walls are at the same elevation, the parapet shall extend not less than 30 inches (762 mm) above the roof surfaces. Where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is not more than 30 inches (762 mm) above the lower roof, the parapet shall extend not less than 30 inches (762 mm) above the lower roof surface. <p>Exception: A parapet is not required in the preceding two cases where the roof covering complies with a minimum Class C rating as tested in accordance with ASTM E108 or UL 790 and the roof decking or sheathing is of <i>noncombustible materials</i> or fire-retardant-treated wood for a distance of 4 feet (1219 mm) on each side of the wall or walls, or one layer of 5/8-inch (15.9 mm) Type X gypsum board is installed directly beneath the roof decking or sheathing, supported by not less than nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>members, for a distance of not less than 4 feet (1219 mm) on each side of the wall or walls and any openings or penetrations in the roof are not within 4 feet (1219 mm) of the common walls. Fire- retardant-treated wood shall meet the requirements of Sections R802.1.5 and R803.2.1.2.</p> <p>3. A parapet is not required where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is more than 30 inches (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the higher <i>roof deck</i> shall have not less than a 1-hour fire-resistance rating. The wall shall be rated for exposure from both sides. <u>Openings shall not be permitted in the wall.</u></p>					
RB61-22	<p>Revise as follows:</p> <p>R302.3 Two-family dwellings. <i>Dwelling units</i> in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the International Building Code <u>constructed in accordance with Section R302.3.1 through R302.3.3.</u> Such separation shall be provided regardless of whether a <i>lot line</i> exists between the two <i>dwelling units</i> or not. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> A fire-resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904. Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8-inch (15.9 mm) Type X gypsum board, an attic draft stop constructed as specified in Section R302.12.1 is provided above and along the wall assembly separating the <i>dwellings</i> and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent. <p>Add new text as follows:</p>		X		Editorial.	

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R302.3.1 Separation. <u>Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E 119, UL 263 or Section 703.3 703.2.2 of the International Building Code.</u></p> <p><u>Exception: A fire-resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904.</u></p> <p>R302.3.2 Continuity. <u>Vertical and horizontal assemblies separating dwelling units shall be constructed in a manner that provides continuity of the fire-resistance rating between the dwelling units. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.</u></p> <p><u>Exception: Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8-inch (15.9 mm) Type-X gypsum board, an attic draft stop constructed as specified in Section R302.12.1 is provided above and along the wall assembly separating the dwellings and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.</u></p> <p>Revise as follows:</p> <p>R302.3.3 R302.2.1 Supporting construction. Where floor assemblies are required to be fire-resistance rated by Section R302.3, the supporting construction of such assemblies shall have an equal or greater fire-resistance rating.</p>					
RB63-22	<p>Delete and substitute as follows:</p> <p>R302.3 Two-family dwellings. <u>Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1 hour fire resistance rating where tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the International Building Code. Such separation shall be provided regardless of whether a lot line exists between the two dwelling units or not. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.</u></p>		X			Flexibility in design options.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>–Exceptions:</p> <p>1. A fire-resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904.</p> <p>2. Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8 inch (15.9 mm) Type X gypsum board, an attic draft stop constructed as specified in Section R302.12.1 is provided above and along the wall assembly separating the <i>dwelling</i>s and the structural framing supporting the ceiling is protected by not less than 1/2 inch (12.7 mm) gypsum board or equivalent.</p> <p><u>R302.3 Two-family dwellings.</u> <i>Dwelling units</i> in two-family dwellings shall be separated from each other in accordance with Sections 302.3.1 through 302.3.5, regardless of whether a <i>lot line</i> exists between two <i>dwelling units</i>.</p> <p>Add new text as follows:</p> <p><u>R302.3.1 Dwelling unit separation.</u> The two dwelling units shall be separated by fire-resistance rated assemblies that are vertical, horizontal, or a combination thereof.</p> <p><u>R302.3.2 Fire-resistance rating.</u> Vertical and horizontal assemblies separating dwelling units shall have a fire-resistance rating of 1-hour, or a fire-resistance rating of 1/2 hour in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904. Fire-resistance ratings shall be based on testing in accordance with ASTM E119 or UL 263, or an analytical method in accordance with Section 703.2.2 of the International Building Code.</p> <p><u>R302.3.3 Continuity.</u> Vertical and horizontal assemblies separating dwelling units shall be constructed in a manner that provides continuity of the fire-resistance rating a continuous and complete separation between the dwelling units.</p> <p><u>R302.3.3.1 Horizontal assemblies.</u> Horizontal assemblies separating dwelling units shall extend to and be tight against exterior walls or vertical separation assemblies complying with Section 302.3.2.</p> <p><u>R302.3.3.2 Vertical assemblies.</u> Vertical assemblies separating dwelling units shall extend to and be tight against any combination of the following:</p> <p>1. The foundation.</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>2. <u>A horizontal assembly complying with Section 302.3.2</u></p> <p>3. <u>The underside of roof sheathing.</u></p> <p>4. <u>The ceiling beneath an uninhabitable attic, provided that the ceiling is constructed using not less than 5/8-inch (15.9 mm) Type X gypsum board, an attic draft stop constructed as specified in Section R302.12.1 is provided above and along the vertical assembly terminating at the ceiling, and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.</u></p> <p>Revise as follows: R302.3.4 R302.3.1 Supporting construction. Where floor assemblies are required to be fire-resistance rated by Section R302.3, the supporting construction of such assemblies have <u>Vertical and horizontal assemblies separating dwelling units shall be supported by construction having an equal or greater fire-resistance rating.</u></p> <p>Add new text as follows: R302.3.5 Vertically stacked dwelling units. <u>Where one dwelling unit in a two-family dwelling is located above the other and an automatic sprinkler system complying with Section P2904 is not provided in both dwelling units, both of the following shall apply:</u></p> <ol style="list-style-type: none"> <u>Horizontal and vertical assemblies separating the dwelling units, including an interior stairway serving as the means of egress for the upper dwelling unit, shall be constructed in a manner that limits the transfer of smoke.</u> <u>A notification appliance connected to smoke alarms in the other dwelling unit shall be provided in each dwelling unit.</u> 					
RB64-22	<p>Add new text as follows: R302.3.6 R302.3.2 Common Shared accessory rooms. <u>A common Shared accessory rooms shall be separated as required by Table R302.3.2 R302.3.6. Openings in a common between shared accessory room and dwelling unit shall comply with Section R302.3.2.1 R302.3.6.1. Attachment of gypsum board shall comply with Table R702.3.5. The wall separation provisions of Table R302.3 R302.3.6 shall not apply to common accessory room walls that are perpendicular to the adjacent dwelling unit wall.</u></p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE										
		Decrease	Neutral	Increase												
Sub Code:																
	<p>TABLE R302.3.6 DWELLING-COMMONSHARED ACCESSORY ROOM SEPARATION</p> <table border="1"> <thead> <tr> <th>SEPARATION</th> <th>MATERIAL</th> </tr> </thead> <tbody> <tr> <td>From the dwelling units and attics</td> <td>Not less than 1/2-inch gypsum board or equivalent applied to the accessory room side wall</td> </tr> <tr> <td>From habitable rooms above or below the common accessory room</td> <td>Not less than 5/8-inch Type X gypsum board or equivalent</td> </tr> <tr> <td>Structure(s) supporting floor/ceiling and wall assemblies used for separation required by this section</td> <td>Not less than 1/2-inch gypsum board or equivalent</td> </tr> <tr> <td>Common accessory rooms located less than 3 feet from a dwelling unit on the same lot</td> <td>Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area</td> </tr> </tbody> </table> <p>For SI: 1 inch=25.4 mm, 1 foot=304.8 mm</p> <p>R302.3.6.1 R302.3.2.1 Opening protection. Openings from a common-shared accessory room or area directly into a room used for sleeping purposes shall not be permitted. Other openings between the shared common accessory room or area and dwelling units shall be equipped with solid wood doors not less than 1 3/8 inches in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches thick, or a fire door assembly with a 20-minute fire-protection rating, equipped with a self-closing or automatic-closing device.</p> <p>R302.3.6.2 R302.3.2.2 Duct penetration. Ducts penetrating the walls or ceilings separating the <i>dwelling</i> from the shared common accessory room shall be constructed of a minimum No. 26 gage (0.48 mm) sheet steel or other <i>approved</i> material and shall not have openings into the common shared accessory room.</p> <p>R302.3.6.3 R302.3.2.3 Other penetrations. Penetrations through the walls, ceiling, and floor level separation required in Section R302.3.2 shall be protected as required by Section R302.11, Item 4.</p>	SEPARATION	MATERIAL	From the dwelling units and attics	Not less than 1/2-inch gypsum board or equivalent applied to the accessory room side wall	From habitable rooms above or below the common accessory room	Not less than 5/8-inch Type X gypsum board or equivalent	Structure(s) supporting floor/ceiling and wall assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent	Common accessory rooms located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area					
SEPARATION	MATERIAL															
From the dwelling units and attics	Not less than 1/2-inch gypsum board or equivalent applied to the accessory room side wall															
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Structure(s) supporting floor/ceiling and wall assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent															
Common accessory rooms located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area															
RB71-22	<p>Revise as follows:</p> <p>TABLE R302.6 DWELLING-GARAGE SEPARATION</p> <table border="1"> <thead> <tr> <th>SEPARATION</th> <th>MATERIAL</th> </tr> </thead> <tbody> <tr> <td>From the residence and attics</td> <td>Not less than 1/2-inch gypsum board or equivalent applied to the garage side</td> </tr> <tr> <td>From <i>living space portions of the dwelling unit</i> above the garage</td> <td>Not less than 5/8-inch Type X gypsum board or equivalent</td> </tr> <tr> <td>Structure(s) supporting floor/ceiling assemblies used for separation required by this section</td> <td>Not less than 1/2-inch gypsum board or equivalent</td> </tr> <tr> <td>Garages located less than 3 feet from a dwelling unit on the same lot</td> <td>Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.</p>	SEPARATION	MATERIAL	From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the garage side	From <i>living space portions of the dwelling unit</i> above the garage	Not less than 5/8-inch Type X gypsum board or equivalent	Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent	Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area			X	\$500-\$1000 cost increase when portions of a dwelling unit including connected spaces are built over a garage.	Improve life safety,
SEPARATION	MATERIAL															
From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the garage side															
From <i>living space portions of the dwelling unit</i> above the garage	Not less than 5/8-inch Type X gypsum board or equivalent															
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent															
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area															
RB73-22	<p>Revise as follows:</p> <p>R302.10.4 Exposed attic insulation. Exposed insulation materials installed on attic floors shall have a critical radiant</p>		X			Editorial.										

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		Decrease	Neutral	Increase		
Sub Code:						
	flux of not less than 0.12 watt per square centimeter <u>when tested in accordance with ASTM E970.</u> Delete without substitution: R302.10.5 Testing. Tests for critical radiant flux shall be made in accordance with ASTM E970					
RB75-22	<p>Revise as follows:</p> <p>R302.13 Fire protection of floors. Floor assemblies that are not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard membrane, 5/8-inch (16 mm) <i>wood structural panel</i> membrane, or equivalent on the underside of the floor framing member. Penetrations or openings for ducts, vents, electrical outlets, lighting, devices, luminaires, wires, speakers, drainage, piping and similar openings or penetrations shall be permitted.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA 13D, or other <i>approved</i> equivalent sprinkler system. 2. Floor assemblies located directly over a <i>crawl space</i> not intended for storage or for the installation of fuel-fired or electric- powered heating <i>appliances</i>. 3. Portions of floor assemblies shall be permitted to be unprotected where complying with the following: <ol style="list-style-type: none"> 3.1. The aggregate area of the unprotected portions does not exceed 80 square feet (7.4 m²) per story. 3.2. Fire blocking in accordance with Section R302.11.1 is installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly. 4. Wood floor assemblies using dimension lumber or <i>structural composite lumber</i> equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other <i>approved</i> floor assemblies demonstrating equivalent fire performance. 5. <u>Wood floor assemblies less than 600 square feet (55.7 m²) within detached accessory structures with no habitable space above them.</u> 	X			Lower cost for some small accessory structures.	Technical adjustment.

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		Decrease	Neutral	Increase		
Sub Code:						
RB76-22	<p>Revise as follows:</p> <p>R303.1 Habitable rooms. <i>Habitable space</i> rooms shall be provided natural light and natural ventilation in accordance with Sections <u>R303.1.1</u> through <u>R303.1.3</u>. have an aggregate glazing area of not less than 8 percent of the floor area of such rooms. Natural <i>ventilation</i> shall be through windows, skylights, doors, louvers or other <i>approved</i> openings to the outdoor air. Such openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants. The openable area to the outdoors shall be not less than 4 percent of the floor area being ventilated.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> For habitable rooms other than kitchens, the glazed areas need not be openable where the opening is not required by Section R310 and a whole house mechanical <i>ventilation</i> system or a mechanical ventilation system capable of producing 0.35 air changes per hour in the habitable rooms is installed in accordance with Section M1505. For kitchens, the glazed areas need not be openable where the opening is not required by Section R310 and a local exhaust system is installed in accordance with Section M1505. The glazed areas need not be installed in rooms where Exception 1 is satisfied and artificial light is provided that is capable of producing an average illumination of 6 footcandles (65 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level. Use of <i>sunroom</i> and patio covers, as defined in Section R202, shall be permitted for natural <i>ventilation</i> if in excess of 40 percent of the exterior <i>sunroom</i> walls are open, or are enclosed only by insect screening. <p>Add new text as follows:</p> <p>R303.1.1 Natural light. <i>Habitable rooms shall have an aggregate area of glazed openings not less than 8 percent of the floor area of such rooms. Required glazed openings shall face open directly onto a street, alley or public way, or a yard or court located on the same lot as the building.</i></p> <p>Exceptions:</p> <ol style="list-style-type: none"> Required glazed openings shall be permitted to face into a roofed porch, deck or patio adjacent to a street, alley, 		X			Editorial.

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>public way, yard or court, where there the longer side of the roofed area is not less than 65 percent unobstructed and the ceiling height is not less than 7 feet (2134 mm).</p> <p>2. Required glazed openings shall be permitted to face into a sunroom adjacent to a street, alley, public way, yard or court.</p> <p>3. Glazed openings are not required where artificial light is provided that is capable of producing an average illumination of 6 footcandles (65 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.</p> <p>4. Eave projections shall not be considered as obstructing the clear open space of a yard or court.</p> <p>R303.1.2 Natural ventilation. Habitable rooms shall have an aggregate area openable to the outdoors not less than 4 percent of the floor area of such rooms. Openings shall be through windows, skylights, doors, louvers or other approved openings to the outdoor air. Such openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants.</p> <p>Exceptions:</p> <p>1. Natural ventilation shall not be required in habitable rooms other than kitchens where a whole-house mechanical ventilation system or a mechanical ventilation system capable of producing 0.35 air changes per hour in the habitable rooms is installed in accordance with Section M1505.</p> <p>2. Natural ventilation shall not be required in kitchens where a local exhaust system is installed in accordance with Section M1505.</p> <p>3. Required ventilation openings shall be permitted to open into a thermally isolated sunroom or roofed porch, deck, or patio where not less than 40 percent of the roofed area perimeter is open to the outdoor air.</p> <p>4. Required ventilation openings shall be permitted to open into a thermally isolated sunroom provided there is an openable area between the adjoining room and the sunroom of not less than one-tenth of the floor area of the interior room and not less than 20 square feet (2 m²). The minimum openable area of the sunroom to outdoor air</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>shall be based on the total floor area of the adjoining room and the sunroom.</p> <p>Revise as follows:</p> <p>R303.2 R303.1.3 Adjoining rooms. For the purpose of determining light and <i>ventilation</i> requirements, rooms shall be considered to be a portion of an adjoining room where not less than one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room and not less than 25 square feet (2.3 m²).</p> <p>Exception: Openings required for light or <i>ventilation</i> shall be permitted to open into a <i>sunroom</i> with thermal isolation or a patio cover, provided that there is an openable area between the adjoining room and the <i>sunroom</i> or patio cover of not less than one-tenth of the floor area of the interior room and not less than 20 square feet (2 m²). The minimum openable area to the outdoors shall be based on the total floor area being ventilated.</p> <p>Delete without substitution:</p> <p>R303.9 Required glazed openings. Required glazed openings shall open directly onto a street or public alley, or a <i>yard</i> or court located on the same <i>lot</i> as the building.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Required glazed openings that face into a roofed porch where the porch abuts a street, <i>yard</i> or court and the longer side of the porch is not less than 65 percent unobstructed and the ceiling height is not less than 7 feet (2134 mm). 2. Eave projections shall not be considered as obstructing the clear open space of a <i>yard</i> or court. 3. Required glazed openings that face into the area under a deck, balcony, bay or floor cantilever where a clear vertical space not less than 36 inches (914 mm) in height is provided. <p>R303.9.1 Sunroom additions. Required glazed openings shall be permitted to open into <i>sunroom additions</i> or patio covers that abut a street, <i>yard</i> or court if in excess of 40 percent of the exterior <i>sunroom</i> walls are open, or are enclosed only by insect screening, and the ceiling height of the <i>sunroom</i> is not less than 7 feet (2134 mm).</p>					

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		Decrease	Neutral	Increase		
Sub Code:						
RB82-22	<p>Add new text as follows: R305.1.2 Habitable attics and basements in existing buildings. <i>Where a change of occupancy creates a habitable attic or habitable space in a basement is created in an existing building, ceiling height shall not be less than 6 foot 8 inches (2032 mm).</i> Exceptions: 1. <u>For rooms with sloped ceilings, the required floor area of the room shall have a ceiling height of not less than 5 feet (1524 mm) and not less than 50 percent of the required floor area shall have a ceiling height of not less than 6 feet 8 inches (2134 mm).</u> 2. <u>At beams, girders, ducts or other obstructions, the ceiling height shall be not less than 6 feet 4 inches (1931 mm) from the finished floor. Bathrooms, toilet rooms and laundry rooms shall have a ceiling height of not less than 6 feet 4 inches (1931 mm).</u></p> <p>Delete without substitution: AJ109.7 Ceiling height. <i>Habitable spaces created in existing basements shall have ceiling heights of not less than 6 feet, 8 inches (2032 mm), except that the ceiling height at obstructions shall be not less than 6 feet 4 inches (1930 mm) from the basement floor. Existing finished ceiling heights in nonhabitable spaces in basements shall not be reduced.</i></p>	X			Reduces cost when a basement floor must be lowered or an existing roof raised to meet ceiling height requirement.	Flexibility.
RB84-22	<p>Revise as follows: R308.4.6 Glazing adjacent to stairs and ramps. Glazing where the bottom exposed edge of the glazing is less than 36 inches (914 mm) above the plane of the adjacent walking surface of <u>flights of stairs stairways, ramp runs, landings between flights of stairs and landings between ramp runs</u> ramps shall be considered to be a hazardous location. Exceptions: 1. Where glazing is adjacent to a walking surface and a horizontal rail is installed at 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (730 N/m) without contacting the glass and have a cross-sectional height of not less than 1½ inches (38 mm). 2. Glazing 36 inches (914 mm) or more measured horizontally from the walking surface.</p>		X			Clarification.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
RB85-22	<p>Revise as follows: R308.6.5 Screens not required. Screens shall not be required where laminated glass complying with Item 1 of Section R308.6.2 is used as single glazing or the inboard pane in multiple glazing. Screens shall not be required where fully tempered glass is used as single glazing or the inboard pane in multiple glazing and either of the following conditions is met:</p> <ol style="list-style-type: none"> 1. The glass area is 16 square feet (1.49 m²) or less; the highest point of glass is not more than 12 feet (3658 mm) above a walking surface; the nominal glass thickness is not more than 3/16 inch (4.8 mm); and for multiple glazing only the other pane or panes are fully tempered, laminated or wired glass. 2. The glass area is greater than 16 square feet (1.49 m²); the glass is sloped 30 degrees (0.52 rad) or less from vertical; and the highest point of glass is not more than 10 feet (3048 mm) above a walking surface. 		X			Clarification.
RB86-22	<p>Revise as follows: R309.4 Automatic garage door openers. Automatic garage door openers, if provided, shall be <i>listed</i> and <i>labeled</i> in accordance with UL 325, and shall be installed in accordance with UL 325 and the manufacturer's installation instructions.</p>		X			Clarification.
RB87-22	<p>Add new text as follows: 309.6 Automotive Lifts. Where provided, automotive lifts shall comply be <i>listed</i> and <i>labeled</i> in accordance with ANSI/ALI ALCTV and Sections 309.6.1 and 309.6.2. 309.6.1 Installation. Automotive lifts shall be installed in accordance with ANSI/ALI ALCTV, the listing, and the lift manufacturer's installation instructions, and listing and labeling requirements. Consideration shall be given to the foundation where an automotive lift will be affixed, to ensure it will support the weight and structural reactions of an installed automotive lift. Automotive lifts shall not be installed within the habitable space of a dwelling unit. 309.6.2 Electrical Installation. Automotive lifts shall be installed in accordance with NFPA 70, and shall be <i>listed</i> and <i>labeled</i> to UL 201 and other standards as determined by the listing agency when evaluated to the requirements of ANSI/ALI ALCTV.</p>		X			Increased Safety.

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Sub Code:						
RB88-22	<p>Add new text as follows: R309.6 Electric vehicle charging systems. <u>Where provided, electric vehicle charging systems shall be installed in accordance with NFPA 70. Electric vehicle charging system equipment shall be listed and labeled in accordance with UL 2202. Electric vehicle supply equipment shall be listed and labeled in accordance with UL 2594.</u></p>		X			Increased safety.
RB89-22	<p>Revise as follows: R310.1 Emergency escape and rescue opening required. <i>Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court having a minimum width of 36 inches (914 mm) that opens to a public way.</i></p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <i>Storm shelters and basements used only to house mechanical equipment not exceeding a total floor area of 200 square feet (18.58 m²).</i> 2. <i>Where the dwelling unit or townhouse unit is equipped with an automatic sprinkler system installed in accordance with Section P2904, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided that the basement has one of the following:</i> <ol style="list-style-type: none"> 2.1. <i>One means of egress complying with Section R311 and one emergency escape and rescue opening.</i> 2.2. <i>Two means of egress complying with Section R311.</i> 3. <i>A yard shall not be required to open directly into a public way where the yard opens to an unobstructed path from the yard to the public way. Such path shall have a width of not less than 36 inches (914 mm).</i> 		X			Clarification.
RB92-22	<p>Revise as follows: R310.1 Emergency escape and rescue opening required. <i>Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue</i></p>		X			Clarification.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p><i>openings</i> shall open directly into a <i>public way</i>, or to a <i>yard</i> or court having a minimum width of 36 inches (914 mm) that opens to a <i>public way</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Storm shelters and basements <i>Basements</i> used only to house mechanical <i>equipment</i> not exceeding a total floor area of 200 square feet (18.58 m²). 2. Storm shelters constructed in accordance with ICC 500. 2. 3. Where the <i>dwelling unit</i> or <i>townhouse unit</i> is equipped with an automatic sprinkler system installed in accordance with Section P2904, sleeping rooms in <i>basements</i> shall not be required to have <i>emergency escape and rescue openings</i> provided that the <i>basement</i> has one of the following: <ol style="list-style-type: none"> 2-1. 3.1. One means of egress complying with Section R311 and one <i>emergency escape and rescue opening</i>. 2-2. 3.2. Two means of egress complying with Section R311. 3. 4. A <i>yard</i> shall not be required to open directly into a <i>public way</i> where the <i>yard</i> opens to an unobstructed path from the <i>yard</i> to the <i>public way</i>. Such path shall have a width of not less than 36 inches (914 mm). 					
RB98-22	<p>Revise as follows:</p> <p>R310.5 Replacement windows for emergency escape and rescue openings. Replacement windows installed in buildings meeting the scope of this code shall be exempt from Sections R310.2 and R310.4.4, provided that the replacement window meets the following conditions:</p> <ol style="list-style-type: none"> 1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window is <u>shall be permitted to be</u> of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window. 2. The replacement window is not part of a change of occupancy. 		X			Increase design options.
RB99-22	<p>Revise as follows:</p> <p>R310.5 Replacement windows for emergency escape and rescue openings. Replacement windows <u>for emergency escape and rescue openings</u> installed in buildings meeting the scope of this code shall be exempt from Sections R310.2 and R310.4.4, provided that the replacement window meets the following conditions:</p>		X			Clarification.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window is of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.</p> <p>2. The replacement window is not part of a change of occupancy.</p> <p>Add new text as follows: <u>R310.5.1 Window opening control device and fall protection device height. Window opening control devices or fall protection device shall be located at a height in accordance with Section R310.1.1 or at as low a height as the device can be installed within the existing clear opening.</u></p> <p>Delete without substitution: AJ102.4.3 Replacement windows for emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings, replacement windows shall be exempt from Sections R310.2 and R310.4.4 provided that the replacement window meets the following conditions:</p> <p>1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.</p> <p>2. Where the replacement window is not part of a change of occupancy.</p> <p>Window opening control devices and fall prevention devices complying with ASTM F2090 shall be permitted for use on windows serving as required emergency escape and rescue openings.</p> <p>AJ102.4.3.1 Control devices. Emergency escape and rescue openings with window opening control devices or fall prevention devices complying with ASTM F2090, after operation to release the control device allowing the window to fully open, shall not reduce the net clear opening area of the window unit. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.</p>					

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		Decrease	Neutral	Increase		
Sub Code:						
RB100-22	<p>Revise as follows:</p> <p>R311.3.2 Floor elevations at other exterior doors. At e-Exterior Doors <u>doors</u> other than the required egress door, the exterior side shall be provided with landings or floors not more than 7³/₄ inches (196 mm) below the top of the threshold.</p> <p>Exception: A top <u>An exterior landing or floor</u> is not required <u>at the exterior doorway</u> where a <i>stairway</i> of not more than two <i>risers</i> is located on the exterior side of the door, provided that the door does not swing over the <i>stairway</i>.</p> <p>R311.7.6 Landings for stairways. There shall be a floor or landing at the top and bottom of each <i>stairway</i>. The width perpendicular to the direction of travel shall be not less than the width of the flight served. For landings of shapes other than square or rectangular, the depth at the walk line and the total area shall be not less than that of a quarter circle with a radius equal to the required landing width. Where the <i>stairway</i> has a straight run, the depth in the direction of travel shall be not less than 36 inches (914 mm).</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> 1. A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided that a door does not swing over the stairs. 2. <u>At an enclosed garage, the top landing at the stair shall be permitted to be not more than 7 3/4 inches (196 mm) below the top of the threshold.</u> 3. <u>At exterior doors, a top landing is not required for an exterior stairway of not more than two risers, provided that the door does not swing over the stairway.</u> 		X			Clarification.
RB101-22	<p>Revise as follows:</p> <p>R311.4 Vertical egress. Egress from <u>basements and habitable levels</u> including habitable attics and basements that are not provided with an egress door in accordance with Section R311.2 shall be by a <i>ramp</i> in accordance with Section R311.8 or a <i>stairway</i> in accordance with Section R311.7.</p>		X			Clarification.
RB103-22	<p>Revise as follows:</p> <p>R311.7.5.3 Nosings. Nosings at treads <u>Treads</u>, landings and floors of <i>stairways</i> shall have a radius of curvature at the <i>nosings</i> not greater than ⁹/₁₆ inch (14 mm) or a bevel not greater than ¹/₂ inch (12.7 mm). A <i>nosings</i> projection not less than ³/₄ inch (19</p>		X			Clarification.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	mm) and not more than 1 ¹ / ₄ inches (32 mm) shall be provided on <i>stairways</i> . The greatest <i>nosing</i> projection shall not exceed the smallest <i>nosing</i> projection by more than 3/8 inch (9.5 mm) within a <i>stairway</i> . Exception: A <i>nosing</i> projection is not required where the tread depth is not less than 11 inches (279 mm).					
RB104-22	Revise as follows: R311.7.5.3 Nosings. <i>Nosings</i> at treads, landings and floors of <i>stairways</i> shall have a radius of curvature at the <i>nosing</i> not greater than 9/16 inch (14 mm) or a bevel not greater than 1/2 inch (12.7 mm). A <i>nosing</i> projection not less than 3/4 inch (19 mm) and not more than 1 ¹ / ₄ inches (32 mm) shall be provided on <i>stairways</i> . The greatest <i>nosing</i> projection shall not exceed the smallest <i>nosing</i> projection by more than 3/8 inch (9.5 mm) within a <i>flight of stairs stairway</i> . Exception: A <i>nosing</i> projection is not required where the tread depth is not less than 11 inches (279 mm).		X			Increase design options.
RB105-22	Revise as follows: R311.7.5.3 Nosings. <i>Nosings</i> at treads, landings and floors of <i>stairways</i> shall have a radius of curvature at the <i>nosing</i> not greater than 9/16 inch (14 mm) or a bevel not greater than 1/2 inch (12.7 mm). A <i>nosing</i> projection not less than 3/4 inch (19 mm) and not more than 1 ¹ / ₄ inches (32 mm) shall be provided on <i>stairways</i> . The greatest <i>nosing</i> projection shall not exceed the smallest <i>nosing</i> projection by more than 3/8 inch (9.5 mm) within a <i>stairway flight</i> and the landing at the top of the <i>flight</i> . Exception: A <i>nosing</i> projection is not required where the tread depth is not less than 11 inches (279 mm).		X			Clarification.
RB106-22	Revise as follows: R311.7.5.3 Nosings. <i>Nosings</i> at treads, landings and floors of <i>stairways</i> shall have a radius of curvature at the <i>nosing</i> not greater than 9/16 inch (14 mm) or a bevel not greater than 1/2 inch (12.7 mm). A <i>nosing</i> projection not less than 3/4 inch (19 mm) and not more than 1 ¹ / ₄ inches (32 mm) shall be provided on <i>stairways</i> . The greatest <i>nosing</i> projection shall not exceed the smallest <i>nosing</i> projection by more than 3/8 inch (9.5 mm) within a <i>stairway</i> . Exception Exceptions: <u>1.</u> A <i>nosing</i> projection is not required where the tread depth is not less than 11 inches (279 mm).	X			If no stock material alterations required.	Clarification.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	2. <u>Where risers are open, the maximum nosing projection shall be permitted to exceed 1 1/4 inches (32 mm).</u>					
RB107-22	<p>Revise as follows:</p> <p>R311.7.6 Landings for stairways. There shall be a floor or landing at the top and bottom of each <i>flight of stairs</i> stairway. The width perpendicular to the direction of travel shall be not less than the width of the flight served. For landings of shapes other than square or rectangular, the depth at the walk line and the total area shall be not less than that of a quarter circle with a radius equal to the required landing width. Where the <i>stairway</i> has a straight run, the depth in the direction of travel shall be not less than 36 inches (914 mm).</p> <p>Exception. <u>The top landing of an interior stairway, including those in an enclosed garage, shall be permitted to be on the other side of a door located at the top of the stairway</u> A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided that a the door does not swing over the stairs.</p>		X			Clarification.
RB108-22	<p>Revise as follows:</p> <p>R311.7.6 Landings for stairways. There shall be a floor or landing at the top and bottom of each <i>stairway</i>. The width perpendicular to the direction of travel shall be not less than the width of the flight served. For landings of shapes other than square or rectangular, the depth at the walk line and the total area shall be not less than that of a quarter circle with a radius equal to the required landing width. Where the <i>stairway</i> has a straight run, the depth in the direction of travel shall be not less than 36 inches (914 mm).</p> <p>Exception: Exceptions:</p> <ol style="list-style-type: none"> 1. A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided that a door does not swing over the stairs. 2. <u>Exterior stairways to grade with three or fewer risers serving a deck, porch or patio shall have a minimum bottom landing width of 36 inches, provided the stairway is not the required access to grade serving the required egress door.</u> 		X			Clarification.
RB110-22	<p>SECTION R311 MEANS OF EGRESS</p> <p>Revise as follows:</p>		X			Editorial.

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Sub Code:						
	<p>R311.7.8 Handrails. <i>Handrails</i> shall be provided on not less than one side of each flight of stairs with four or more <i>risers</i> and shall comply with <u>Section R312</u>.</p> <p>R311.7.11.2 Handrails of alternating tread devices. <i>Handrails</i> shall be provided on both sides of alternating tread devices and shall comply with <u>Section R312</u>. Sections R311.7.8.2 through R311.7.8.6. <i>Handrail</i> height shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).</p> <p>R311.7.12.2 Handrails of ship's ladders. <i>Handrails</i> shall be provided on both sides of ship's ladders and shall comply with <u>Section R312</u>. Sections R311.7.8.2 through R311.7.8.6. <i>Handrail</i> height shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).</p> <p>R311.8.3 Handrails required. <i>Handrails</i> shall be provided on not less than one side of <i>ramps</i> exceeding a slope of 1 unit vertical in 12 units horizontal (8.33-percent slope) and shall comply with <u>Section R312</u>.</p> <p>Delete without substitution:</p> <p>R311.8.3.1 Height. <i>Handrail</i> height, measured above the finished surface of the <i>ramp</i> slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).</p> <p>R311.8.3.2 Grip size. <i>Handrails</i> on <i>ramps</i> shall comply with <u>Section R311.7.8.5</u>.</p> <p>R311.8.3.3 Continuity. <i>Handrails</i> where required on <i>ramps</i> shall be continuous for the full length of the <i>ramp</i>. <i>Handrail</i> ends shall be returned or shall terminate in newel posts or safety terminals. <i>Handrails</i> adjacent to a wall shall have a space of not less than 1¹/₂ inches (38 mm) between the wall and the <i>handrails</i>.</p> <p>Add new text as follows:</p> <p><u>SECTION R312 HANDRAILS</u></p> <p><u>R312.1 General.</u> <i>Handrails</i> shall comply with <u>Section R312</u>.</p> <p>Revise as follows:</p> <p>R311.7.8.1 <u>R312.2 Height.</u> <i>Handrail</i> height, measured vertically from the sloped plane adjoining the <i>treadnosing</i>, or finish surface of <i>ramp</i> slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm). <u><i>Handrail</i> height on alternating tread devices and ship's ladders shall be uniform and not less than 30 inches (762 mm) and not more than 34 inches (864 mm).</u></p>					

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>Exceptions:</p> <ol style="list-style-type: none"> The use of a volute, turnout or starting easing shall be allowed over the lowest tread. Where <i>handrail</i> fittings or bendings are used to provide continuous transition between flights, transitions at <i>winder</i> treads, the transition from <i>handrail</i> to <i>guard</i>, or used at the start of a flight, the <i>handrail</i> height at the fittings or bendings shall be permitted to exceed 38 inches (965 mm). <p>R311.7.8.2 R312.3 Handrail projection. <i>Handrails</i> shall not project more than 4¹/₂ inches (114 mm) on either side of the <i>stairway or ramp</i>.</p> <p>Exception: Where <i>nosings</i> of landings, floors or passing flights project into the <i>stairway</i> reducing the clearance at passing <i>handrails</i>, <i>handrails</i> shall project not more than 6¹/₂ inches (165 mm) into the <i>stairway</i>, provided that the stair width and <i>handrail</i> clearance are not reduced to less than that required.</p> <p>R311.7.8.3 R312.4 Handrail clearance. <i>Handrails</i> adjacent to a wall shall have a space of not less than 1¹/₂ inches (38 mm) between the wall and the <i>handrails</i>.</p> <p>R311.7.8.4 R312.5 Continuity. <i>Handrails</i> shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. <u><i>Handrails where required for ramps shall be continuous for the full length of the ramp.</i></u> <i>Handrail ends</i> shall be returned toward a wall, guard walking surface continuous to itself, or terminate to a post.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Handrail continuity</i> shall be permitted to be interrupted by a newel post at a turn in a flight with winders, at a landing, or over the lowest tread. A volute, turnout or starting easing shall be allowed to terminate over the lowest tread and over the top landing. <p>R311.7.8.5 R312.6 Grip size. Required <i>handrails</i> shall be of one of the following types or provide equivalent graspability.</p> <ol style="list-style-type: none"> Type I. <i>Handrails</i> with a circular cross section shall have an outside diameter of not less than 1¹/₄ inches (32 mm) and not greater than 2 inches (51 mm). If the <i>handrail</i> is not circular, it shall have a perimeter of not less than 4 inches (102 mm) and not greater than 6¹/₄ inches (160 mm) and a cross section 					

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	<p>of not more than 2¹/₄ inches (57 mm). Edges shall have a radius of not less than 0.01 inch (0.25 mm).</p> <p>2. Type II. <i>Handrails</i> with a perimeter greater than 6¹/₄ inches (160 mm) shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within ³/₄ inch (19 mm) measured vertically from the tallest portion of the profile and have a depth of not less than ⁵/₁₆ inch (8 mm) within ⁷/₈ inch (22 mm) below the widest portion of the profile. This required depth shall continue for not less than ³/₈ inch (10 mm) to a level that is not less than 1³/₄ inches (45 mm) below the tallest portion of the profile. The width of the <i>handrail</i> above the recess shall be not less than 1¹/₄ inches (32 mm) and not more than 2³/₄ inches (70 mm). Edges shall have a radius of not less than 0.01 inch (0.25 mm).</p> <p>R311.7.8.6 R312.7 Exterior plastic composite handrails. <i>Plastic composite exterior handrails</i> shall <u>also</u> comply with the requirements of Section R507.2.2.</p>					
RB111-22	<p>Revise as follows:</p> <p>R311.7.8.4 Continuity. Handrails shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned toward <u>or terminate at</u> a post, wall, guard, walking surface, <u>or wrap</u> continuous to itself or terminate to a post. The end of the handrail Handrail returns shall not form a gap more than 1/4 inch (6.4 mm) from the adjacent surface.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Handrail continuity shall be permitted to be interrupted by a newel post at a turn in a flight with winders, at a landing, or over the lowest tread. 2. A volute, turnout or starting easing shall be allowed to terminate over the lowest tread and over the top landing. <p>R311.8.3.3 Continuity. <i>Handrails</i> where required on <i>ramps</i> shall be continuous for the full length of the <i>ramp</i>. <i>Handrail</i> ends shall be returned <u>toward</u> or shall terminate in at newel posts or safety terminals <u>a post, wall, guard, walking surface, or wrap</u> continuous to itself. The end of the handrail Handrail returns shall not form a gap more than 1/4 inch (6.4 mm) from the adjacent wall surface. <i>Handrails</i> adjacent to a wall shall have a</p>		X		Clarification.	

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	space of not less than 1 ¹ / ₂ inches (38 mm) between the wall and the <i>handrails</i> .					
RB112-22	<p>SECTION R311 MEANS OF EGRESS Revise as follows: R311.7.8.4 Continuity. Handrails shall be continuous for the full length of the flight, from a point directly above the top riser <u>nosing of the landing at the top of the flight</u> to a point directly above the lowest riser <u>nosing</u> of the flight. Handrail ends shall be returned toward a wall, guard walking surface continuous to itself, or terminate to a post.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Handrail continuity shall be permitted to be interrupted by a newel post at a turn in a flight with winders, at a landing, or over the lowest tread. A volute, turnout or starting easing shall be allowed to terminate over the lowest tread and over the top landing. 		X			Editorial.
RB113-22	<p>Revise as follows: R311.7.8.4 Continuity. Handrails shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned toward a wall, guard, walking surface, continuous to itself, or terminate to a post.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Handrail continuity shall be permitted to be interrupted by a newel post at a turn in a flight with winders, at a landing, or over the lowest tread. A volute, turnout or starting easing shall be allowed to terminate over the lowest tread and over the top or bottom landings landing. 		X			Clarification.
RB114-22	<p>Add new text as follows: R311.7.9 Stairways in existing buildings. Where an existing stair is completely reconstructed or an existing stair serves habitable space created by a change of occupancy, the stairs shall comply with the requirements of this code for new construction. Alterations to existing stairs shall comply with the Sections R311.7.8 and R311.7.9.1 through R311.7.9.4. Alterations to existing stairs shall not be required to comply with the requirements of this code where the existing space and</p>	X			Eliminates the need for reframing floor openings to allow for larger stairs to meet current code.	Flexibility from full code compliance.

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	<p>construction does not allow a reduction in pitch or slope.</p> <p>R311.7.9.3 Stair landing. Landings serving existing stairs being altered or modified shall not be reduced below the existing <i>stairway</i> landing depth and width. Existing stairs not otherwise being altered shall be permitted to maintain the current landing depth and width.</p> <p>R311.7.9.4 Stair treads and risers. An existing stairway shall not be required to comply with Section R311.7.5 where the existing space and construction does not allow a reduction in pitch or slope. Where <i>risers</i> are added to an existing stair, the tread and riser dimensions of the added <i>risers</i> shall match the existing stair.</p> <p>Revise as follows: AJ109.8 Stairs.</p> <p>AJ109.8.1 Stair width. Existing <i>basement</i> stairs and <i>handrails</i> not otherwise being altered or modified shall be permitted to maintain their current clear width at, above and below existing <i>handrails</i>.</p> <p>AJ109.8.2 Stair headroom. Headroom height on existing <i>basement</i> stairs being altered or modified shall not be reduced below the existing <i>stairway</i> finished headroom. Existing <i>basement</i> stairs not otherwise being altered shall be permitted to maintain the current finished headroom.</p> <p>AJ109.8.3 Stair landing. Landings serving existing <i>basement</i> stairs being altered or modified shall not be reduced below the existing <i>stairway</i> landing depth and width. Existing <i>basement</i> stairs not otherwise being altered shall be permitted to maintain the current landing depth and width.</p>					
RB121-22	<p>Revise as follows:</p> <p>R314.1 General. Smoke alarms shall comply with NFPA 72, and Section R314 <u>and the manufacturer's installation instructions</u> .</p> <p>R314.3.1 Installation near cooking appliances. Smoke alarms shall not be installed a minimum of 10 ft. (3.0 m) horizontally from a permanently installed cooking appliance. in the following locations unless this would prevent placement of a smoke alarm in a location required by Section R314.3.</p> <p>1. Ionization smoke alarms shall not be installed less than 20 feet (6096 mm) horizontally from a permanently installed cooking appliance.</p>		X			Editorial.

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	<p>2. Ionization smoke alarms with an alarm silencing switch shall not be installed less than 10 feet (3048 mm) horizontally from a permanently installed cooking appliance.</p> <p>3. Photoelectric smoke alarms shall not be installed less than 6 feet (1828 mm) horizontally from a permanently installed cooking appliance.</p> <p>4. Smoke alarms listed and marked "helps reduce cooking nuisance alarms" shall not be installed less than 6 feet (1828 mm) horizontally from a permanently installed cooking appliance.</p> <p><u>Exception: Smoke alarms shall be permitted to be installed a minimum of 6 ft. (1.8 m) horizontally from a permanently installed cooking appliance where necessary to comply with Section R314.3.</u></p>					
RB122-22	<p>Revise as follows: R314.1.1 Listings. Smoke alarms shall be <i>listed and labeled</i> in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be <i>listed and labeled</i> in accordance with UL 217 and UL 2034.</p> <p>Add new text as follows: R314.1.2 Installation. <u>Smoke alarms and combination smoke and carbon monoxide alarms shall be installed in accordance with their listing and the manufacturer's instructions.</u></p>		X			Editorial.
RB124-22	<p>Revise as follows: R315.1.1 Listings. Carbon monoxide alarms shall be <i>listed and labeled</i> in accordance with UL 2034. Combination carbon monoxide and smoke alarms shall be <i>listed and labeled</i> in accordance with UL 2034 and UL 217.</p> <p>Add new text as follows: R315.1.2 Installation. <u>Carbon monoxide alarms, and combination carbon monoxide and smoke alarms, shall be installed in accordance with their listing and the manufacturer's instructions.</u></p>		X			Editorial.
RB 125-22	<p>Revise as follows: R315.7.1 General. Household carbon monoxide detection systems shall comply with NFPA 720 <u>72</u>. Carbon monoxide detectors shall be <i>listed</i> in accordance with UL 2075.</p>		X			Clarification.

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	R315.7.2 Location. Carbon monoxide detectors shall be installed in the locations specified in Section R315.3. These locations supersede the locations specified in NFPA 720 <u>72</u> .											
RB127-22	<p>SECTION R316 FOAM PLASTIC Add new text as follows: R316.1.1 Spray-applied foam plastic. <u>Single- and multiple-component spray-applied foam plastic insulation shall comply with the provisions of Section R316 and ICC 1100.</u> R316.1.2 Insulating sheathing. <u>Foam plastic materials used as <i>insulating sheathing</i> shall comply with the provisions of Section R316 and the material standards in Table R316.1.2.</u> TABLE R316.1.2 MATERIAL STANDARDS FOR FOAM PLASTIC INSULATING SHEATHING</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Expanded Polystyrene (EPS)</td> <td style="padding: 2px;">ASTM C578</td> </tr> <tr> <td style="padding: 2px;">Extruded Polystyrene (XPS)</td> <td style="padding: 2px;">ASTM C578</td> </tr> <tr> <td style="padding: 2px;">Polyisocyanurate</td> <td style="padding: 2px;">ASTM C1289</td> </tr> </table>	Expanded Polystyrene (EPS)	ASTM C578	Extruded Polystyrene (XPS)	ASTM C578	Polyisocyanurate	ASTM C1289		X			Editorial.
Expanded Polystyrene (EPS)	ASTM C578											
Extruded Polystyrene (XPS)	ASTM C578											
Polyisocyanurate	ASTM C1289											
RB129-22	<p>Revise as follows: R316.6 Specific approval. Foam plastic not meeting the requirements of Sections R316.3 through R316.5 shall be specifically <i>approved</i> on the basis of one of the following approved tests: NFPA 286 with the acceptance criteria of Section R302.9.4, FM 4880, UL 1040 or UL 1715, or fire tests related to actual end-use configurations. Approval shall be based on a <u>an approved large-scale test reflecting the actual end-use configuration and shall be performed on the finished foam plastic assembly in the maximum thickness intended for use. Assemblies tested shall include seams, joints and other typical details used in the installation of the assembly and shall be tested in the manner intended for use. The <i>approved large-scale test shall comply with one of the following: NFPA 286 with the acceptance criteria of Section R302.9.4, FM 4880, UL 1040 or UL 1715.</i></u></p>		X			Editorial.						
RB131-22	<p>R316.8 Wind resistance. Foam plastic insulation complying with ASTM C578 and ASTM C1289 and used as exterior wall sheathing on framed wall assemblies shall comply with SBCA FS 100 for wind pressure resistance unless installed directly over <u>or under</u> a sheathing material that is separately capable of resisting the wind load or otherwise exempted from the scope of SBCA FS 100.</p>		X			Adds design option.						

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Sub Code:						
RB133-22	<p>Revise as follows: R317.3 Fasteners and connectors in contact with preservative-treated and fire-retardant-treated wood. Fasteners, including nuts and washers, and connectors in contact with preservative-treated wood and fire-retardant-treated wood shall be in accordance with this section. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A153. <u>The coating weight for zinc-coated nails shall be in accordance with ASTM A153 Class D (1 oz / ft²) or ASTM A641 Class 3S (1 oz / ft²).</u> Stainless steel driven fasteners shall be in accordance with the material requirements of ASTM F1667.</p>		X			Editorial.
RB134-22	<p>Revise as follows: R320.1 Scope Dwelling units or sleeping units. Where there are four or more <i>dwelling units</i> or <i>sleeping units</i> in a single structure, the provisions of Chapter 11 of the International Building Code for Group R-3 shall apply. Exception: Owner-occupied <i>lodging houses</i> with five or fewer guestrooms are not required to be accessible. R320.2 Live/work units. In <i>live/work units</i>, the nonresidential portion shall be accessible in accordance with Sections 508.5.9 and 508.5.11 of the <i>International Building Code</i>. In a structure where there are four or more <i>live/work units</i>, the dwelling portion of the <i>live/work unit</i> shall comply with Section 1108.6.2.1 of the <i>International Building Code</i>. Add new text as follows: R320.3 Care facilities. Where care facilities are permitted to be constructed in accordance with this code Section R101.2, the portions of the dwelling used to operate a business providing care shall be accessible in accordance with Chapter 11 of the <i>International Building Code</i>.</p>		X			Editorial.
RB135-22	<p>Add new text as follows: R321.1.1 Private Residence Elevators. The design, construction, and installation of private residence elevators installed within a residential unit or providing access to one individual dwelling unit shall conform to ASME A17.1/CSA B44, Section 5.3. R321.1.1.1 Hoistway Enclosures.. Hoistway enclosures for private residence elevators shall comply with ASME A17.1/CSA B44, Requirement 5.3.1.1</p>		X			Clarification.

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	R321.1.1.2 Hoistway Opening Protection. <u>Hoistway landing doors for private residence elevators shall comply with ASME A17.1/CSA B44, Requirements 5.3.1.8.1 through 5.3.1.8.3.</u>					
RB137-22	<p>Revise as follows:</p> <p>R322.2.1 Elevation requirements.</p> <ol style="list-style-type: none"> 1. Buildings and structures in flood hazard areas, not including flood hazard areas designated as Coastal A Zones, shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher. 2. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including <i>basement</i>) elevated to a height above the highest adjacent <i>grade</i> of not less than the depth number specified in feet (mm) on the FIRM plus 1 foot (305 mm), or not less than 3 feet (915 mm) if a depth number is not specified. 3. <i>Basement</i> floors that are below <i>grade</i> on all sides shall be elevated to or above base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher. 4. <u>Attached garages and carports</u> Garage and carport floors shall comply with one of the following: <ol style="list-style-type: none"> 4.1. They <u>The floors</u> shall be elevated to or above the elevations required in Item 1 or Item 2, as applicable. 4.2. They <u>The floors</u> shall be at or above <i>grade</i> on not less than one side. Where a <u>an attached</u> garage or carport is enclosed by walls, <u>the walls shall have flood openings that comply with Section R322.2.2 and the attached garage or carport shall be used solely for parking, building access or storage.</u> 5. <u>Detached accessory structures and detached garages shall comply with either of the following:</u> <ol style="list-style-type: none"> 5.1. <u>The floors shall be elevated to or above the elevations required in Item 1 or Item 2, as applicable.</u> 5.2. <u>The floors are permitted below the elevations required in Item 1 or Item 2, as applicable, provided such detached structures comply with all of the following:</u> <ol style="list-style-type: none"> 5.2.1. <u>Are used solely for parking or storage.</u> 5.2.2. <u>Are one story and not larger than 600 square feet (55.75 m²).</u> 	X			Detached accessory structures will no longer be required to be elevated or dry flood proofed when they are smaller than the specified limits. Large structures the cost is \$33 per foot of elevation per pile and \$325 per foot of elevation for stairs.	Improved safety.

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Sub Code:						
	<p><u>5.2.3.</u> Are anchored to resist flotation, collapse or lateral movement resulting from design flood loads.</p> <p><u>5.2.4.</u> Have flood openings that comply with Section R322.2.2.</p> <p><u>5.2.5.</u> Are constructed of flood damage-resistant materials that comply with Section R322.1.8.</p> <p><u>5.2.6.</u> Have mechanical, plumbing and electrical systems, if applicable, that comply with Section R322.1.6.</p> <p>Exception: Enclosed areas below the elevation required in this section, including <i>basements</i> with floors that are not below <i>grade</i> on all sides, shall meet the requirements of Section R322.2.2.</p> <p>R322.3.2 Elevation requirements.</p> <ol style="list-style-type: none"> 1. Buildings and structures erected within coastal high-hazard areas and Coastal A Zones, shall be elevated so that the bottom of the lowest horizontal structural members supporting the lowest floor, with the exception of piling, pile caps, columns, grade beams and bracing, is elevated to or above the base flood elevation plus 1 foot (305 mm) or the design flood elevation, whichever is higher. 2. <i>Basement</i> floors that are below <i>grade</i> on all sides are prohibited. 3. <u>Attached garages</u> Garages used solely for parking, building access or storage, and carports shall comply with Item 1 or shall be at or above <i>grade</i> on not less than one side and, if enclosed with walls, such walls shall comply with Item 6.7. 4. <u>Detached accessory structures and detached garages shall comply with either of the following:</u> <ol style="list-style-type: none"> <u>4.1.</u> The bottom of the lowest horizontal structural member supporting the floors shall be elevated to or above the elevation required in Item 1. <u>4.2.</u> The floors are permitted below the elevations required in Item 1, provided such detached structures comply with all of the following: <ol style="list-style-type: none"> <u>4.2.1.</u> Are used solely for parking or storage. <u>4.2.2.</u> Are one story and not larger than 100 square feet (9.29 m²). 					

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	<p><u>4.2.3.</u> <u>Are anchored to resist flotation, collapse or lateral movement resulting from design flood loads.</u></p> <p><u>4.2.4.</u> <u>Are constructed of flood damage-resistant materials that comply with Section R322.1.8.</u></p> <p><u>4.2.5.</u> <u>Have mechanical, plumbing and electrical systems, if applicable, that comply with Section R322.1.6.</u></p> <p><u>4.5.</u> The use of fill for structural support is prohibited.</p> <p><u>5.6.</u> Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.</p> <p><u>6.7.</u> Walls and partitions enclosing areas below the elevation required in this section shall meet the requirements of Sections R322.3.5 and R322.3.6.</p>					
RB138-22	<p>Revise as follows:</p> <p>R322.2.2 Enclosed area below required elevation. Enclosed areas, including crawl spaces, that are below the elevation required in Section R322.2.1 shall:</p> <ol style="list-style-type: none"> 1. Be used solely for parking of vehicles, building access or storage. 2. Be provided with flood openings that meet the following criteria and are installed in accordance with Section R322.2.2.1: <ol style="list-style-type: none"> 2.1. The total net area of nonengineered openings shall be not less than 1 square inch (645 mm²) for each square foot (0.093 m²) of enclosed area where the enclosed area is measured on the exterior of the enclosure walls, or the openings shall be designed as engineered openings and the <i>construction documents</i> shall include a statement by a registered design professional that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.7.2.2 of ASCE 24. 	X			Cost of installation of 2 flood openings devices at \$200-\$300 each for utility chases and elevator shafts that extend below elevated buildings.	Clarity and design options for utility chases and elevator shafts.

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	<p>2.2. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.</p> <p>2.3. The presence of louvers, blades, screens and faceplates or other covers and devices shall allow the automatic flow of floodwater into and out of the enclosed areas and shall be accounted for in the determination of the net open area.</p> <p>Exceptions: The following shall not be required to comply with this section:</p> <ol style="list-style-type: none"> 1. <u>Elevator shafts.</u> 2. <u>Utility chases that protect utility lines from freezing, provided the utility chases are the minimum size necessary to protect the utility lines and do not provide access for a person to enter the space.</u> <p>R322.3.5 Walls below required elevation. Walls and partitions are permitted below the elevation required in Section R322.3.2, provided that such walls and partitions are not part of the structural support of the building or structure and:</p> <ol style="list-style-type: none"> 1. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and 2. Are constructed with insect screening or open lattice; or 3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a resistance of not less than 10 (479 Pa) and not more than 20 pounds per square foot (958 Pa) as determined using allowable stress design; or 4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), as determined using allowable stress design, the <i>construction documents</i> shall include documentation prepared and sealed by a registered <i>design professional</i> that: <ol style="list-style-type: none"> 4.1. The walls and partitions below the required elevation have been designed to collapse from a water load less than that which would occur during the base flood. 					

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	<p>4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on structural and nonstructural building components. Water-loading values used shall be those associated with the design flood. Wind-loading values shall be those required by this code.</p> <p>5. Walls intended to break away under flood loads as specified in Item 3 or 4 have flood openings that meet the criteria in Section R322.2.2, Item 2.</p> <p>Exceptions: The following shall not be required to comply with this section:</p> <ol style="list-style-type: none"> 1. Elevator shafts. 2. Utility chases that protect utility lines from freezing, provided the utility chases are the minimum size necessary to protect the utility lines and do not provide access for a person to enter the space. 					
RB139-22	<p>Revise as follows:</p> <p>R322.3.2 Elevation requirements.</p> <ol style="list-style-type: none"> 1. Buildings and structures erected within coastal high-hazard areas and Coastal A Zones, shall be elevated so that the bottom of the lowest horizontal structural members supporting the lowest floor, with the exception of piling, pile caps, columns, grade beams and bracing, is elevated to or above the base flood elevation plus 1 foot (305 mm) or the design flood elevation, whichever is higher. <u>Where stem wall foundations are permitted in Coastal A Zones in accordance with Section R322.3.3, the bottom of the lowest horizontal structural member supporting the lowest floor is the top of the foundation wall, or top of the portion of the foundation wall, supporting the slab.</u> 2. <i>Basement</i> floors that are <i>belowgrade</i> on all sides are prohibited. 3. Garages used solely for parking, building access or storage, and carports shall comply with Item 1 or shall be at or above <i>grade</i> on not less than one side and, if enclosed with walls, such walls shall comply with Item 6. 4. The use of fill for structural support is prohibited. 		X			Clarification.

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	5. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways. 6. Walls and partitions enclosing areas below the elevation required in this section shall meet the requirements of Sections R322.3.5 and R322.3.6.					
RB140-22	<p>Revise as follows:</p> <p>R322.3.3 Foundations. Buildings and structures erected in coastal high-hazard areas and Coastal A Zones shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns and shall comply with the following:</p> <ol style="list-style-type: none"> The space below the elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.5. Pilings shall <u>be designed in accordance with ASCE 24 to have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift) and pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling.</u> Columns and their supporting foundations shall be designed <u>in accordance with ASCE 24 to resist combined wave and wind loads, lateral and uplift, and shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the columns. Spread footing, mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the spread footing, mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. If permitted, spread footing, mat, raft or other foundations that support columns shall be designed in accordance with ASCE 24.</u> Flood and wave loads shall be <u>determined in accordance with ASCE 7 and shall include loads those associated with the design flood.</u> Wind loads shall be those required by this code. Foundation designs and <i>construction documents</i> shall be prepared and sealed in accordance with Section R322.3.9. <p>Exception: In Coastal A Zones, stem wall foundations supporting a floor system above and backfilled with soil or gravel to the</p>		X		Clarification.	

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	underside of the floor system shall be permitted provided that the foundations are designed to account for wave action, debris impact, erosion and local scour. Where soils are susceptible to erosion and local scour, stem wall foundations shall have deep footings to account for the loss of soil.					
RB142-22	<p>Revise as follows:</p> <p>R322.3.5 Walls below required elevation. Walls and partitions are permitted below the elevation required in Section R322.3.2, provided that such walls and partitions are not part of the structural support of the building or structure and:</p> <ol style="list-style-type: none"> 1. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and 2. Are constructed with insect screening or open lattice; or 3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a resistance of not less than 10 (479 Pa) and not more than 20 pounds per square foot (958 Pa) as determined using allowable stress design, <u>or a resistance to an ultimate load of not less than 17 (814 Pa) and not more than 33 pounds per square foot (1580 Pa);</u> or 4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), as determined using allowable stress design <u>or an ultimate load of 33 pounds per square foot (1580 Pa),</u> the <i>construction documents</i> shall include documentation prepared and sealed by a registered <i>design professional</i> that: <ol style="list-style-type: none"> 4.1. The walls and partitions below the required elevation have been designed to collapse from a water load less than that which would occur during the base flood. 4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on structural and nonstructural building components. Water-loading values used shall be those associated with the design flood. Wind-loading values shall be those required by this code. 		X			Editorial.

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	5. Walls intended to break away under flood loads as specified in Item 3 or 4 have flood openings that meet the criteria in Section R322.2.2, Item 2.					
RB143-22	<p>Revise as follows: R323.1 General. This section applies to <u>the design, construction and installation of storm shelters</u> where constructed as <u>either separate detached buildings or where constructed as safe rooms or spaces within buildings</u> for the purpose of providing <u>refuge protection</u> from storms that produce high winds, such as <u>tornados, and hurricanes and other severe windstorms</u>. In addition to other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC 500.</p> <p>Add new text as follows: R323.2 Construction. <u>Storm shelters shall be constructed in accordance with this code and ICC 500.</u></p> <p>Revise as follows: R323.1.R323.2.1 Sealed documentation. The <i>construction documents</i> for all structural components and <i>impact protective systems</i> of the <u>installed in storm shelter shelters</u> shall be prepared and sealed by a <i>registered design professional</i> indicating that the design meets the criteria of <u>compliance with ICC 500.</u></p> <p>Exception: <i>Storm shelters</i>, structural components and impact-protective systems that are <i>listed and labeled</i> to indicate compliance with ICC 500.</p>		X			Editorial.
RB145-22	<p>Revise as follows: R324.3.1 Equipment listings. <i>Photovoltaic panels</i> and modules shall be <i>listed and labeled</i> in accordance with UL 1703 or with both UL 61730-1 and UL 61730-2. Inverters shall be <i>listed and labeled</i> in accordance with UL 1741. Systems connected to the utility grid shall use inverters <i>listed</i> for utility interaction. Mounting systems <i>listed and labeled</i> in accordance with UL 2703 shall be installed in accordance with the manufacturer’s installation instructions and their listings. <u>BIPV roof coverings and BIPV roof assemblies shall be listed and labeled in accordance with UL 7103.</u></p>		X			Clarification.
RB146-22	<p>Revise as follows: R324.5 Building-integrated photovoltaic systems. Building-integrated photovoltaic (BIPV) systems that serve as roof</p>		X			Increases design options.

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	<p>coverings shall be designed and installed in accordance with Section R905 Sections R324.5.1 through R324.5.2.</p> <p>R324.5.1 Photovoltaic shingles BIPV roofing systems. Photovoltaic shingles BIPV roofing systems shall comply with Section R905.16. BIPV roof panels shall comply with Section R905.17.</p> <p>R324.5.2R324.5.1.1 Fire classification. <i>Building-integrated photovoltaic systems</i> shall have a fire classification in accordance with Section R902.3.</p> <p>R324.5.3 BIPV roof panels. BIPV roof panels shall comply with Section R905.17.</p> <p>Add new text as follows:</p> <p>R324.5.2 BIPV Exterior wall coverings and fenestration. BIPV exterior wall coverings and fenestration shall comply with Section R705.</p>					
RB147-22	<p>Revise as follows:</p> <p>R324.6 Roof access and pathways. Roof access, pathways and setback requirements shall be provided in accordance with Sections R324.6.1 through R324.6.2.1. Access and minimum spacing shall be required to provide emergency access to the roof, to provide pathways to specific areas of the roof, provide for smoke ventilation opportunity areas, and to provide emergency egress from the roof.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Detached, nonhabitable structures, including but not limited to detached garages, parking shade structures, carports, solar trellises and similar structures, shall not be required to provide roof access. 2. Roof access, pathways and setbacks need not be provided where the code official has determined that rooftop operations will not be employed. 3. These requirements shall not apply to roofs with slopes of 2 units vertical in 12 units horizontal (17-percent slope) or less. 4. BIPV systems <i>listed</i> in accordance with Section 690.12(B)(2) of NFPA 70 UL 3741, where the removal or cutting away of portions of the BIPV system during fire-fighting operations has been determined to not expose a fire fighter to electrical shock hazards. 		X			Editorial.

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	<p>R324.6.3 Emergency escape and rescue openings. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an <i>emergency escape and rescue opening</i>. A pathway not less than 36 inches (914 mm) wide shall be provided to the emergency escape and rescue opening.</p> <p>Exception: BIPV systems <i>listed</i> in accordance with Section 690.12(B)(2) of NFPA 70-UL 3741, where the removal or cutting away of portions of the BIPV system during fire-fighting operations has been determined to not expose a fire fighter to electrical shock hazards.</p>					
RB149-22	<p>Add new text as follows:</p> <p>R324.6.4 Building-integrated photovoltaic (BIPV) systems. <u>Where building-integrated photovoltaic (BIPV) systems are installed in a manner that creates areas with electrical hazards to be hidden from view, markings shall be provided to identify the hazardous areas to avoid for ladder placement. The markings shall be reflective and be visible from grade beneath the eaves or other location approved by the fire code official.</u></p> <p>Exception: BIPV systems <i>listed</i> in accordance with UL 3741, where the removal or cutting away of portions of the BIPV system during fire-fighting operations have been determined to not expose a fire fighter to electrical shock hazards.</p>		X			Editorial.
RB150-22	<p>Add new text as follows:</p> <p>R324.7 Elevated photovoltaic (PV) support structures. <u>Elevated PV support structures used as an accessory structure shall comply with either Section R324.7.1 or R324.7.2. Elevated PV support structures shall be considered a roof for the purposes of establishing the number of stories and fire separation distances.</u></p> <p>R324.7.1 PV panels installed over open-grid framing or non-combustible deck. <u>Elevated PV support structures with PV panels installed over open-grid framing or over a noncombustible deck shall have PV panels tested, listed, and labeled with a fire type rating in accordance with UL 1703 or with both UL 61730-1 and UL 61730-2. Photovoltaic panels marked “not fire rated” shall not be installed on elevated PV support structures.</u></p> <p>324.7.2 PV panels installed over a roof assembly. <u>Elevated PV support structures with a PV panel system installed over a</u></p>		X			Adds design options.

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	<u>roof assembly shall have a fire classification in accordance with Section R902.4.</u>					
RB152-22	<p>SECTION R325 MEZZANINES Revise as follows: R325.3 Area limitation. The aggregate area of a <i>mezzanine</i> or <i>mezzanines</i> shall be not greater than one-third of the floor area of the room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the <i>mezzanine</i> is located. Exception: The aggregate area of a <i>mezzanine</i> located within a <i>dwelling unit</i> equipped with an automatic sprinkler system in accordance with Section P2904 shall not be greater than one-half of the floor area of the room, provided that the <i>mezzanine</i> meets all of the following requirements:</p> <ol style="list-style-type: none"> 1. Except for enclosed closets and bathrooms, the <i>mezzanine</i> is open to the room in which such <i>mezzanine</i> is located. 2. The opening to the room is unobstructed except for walls not more than 42 36 inches (1067 mm 914 mm) in height, columns and posts. 3. The exceptions to Section R325.5 are not applied. <p>R325.5 Openness. <i>Mezzanines</i> shall be open and unobstructed to the room in which they are located except for walls not more than 36 42 inches (1067 mm 914 mm) in height, columns, <u>beams</u> and posts. Exceptions Exception:</p> <ol style="list-style-type: none"> 1. <i>Mezzanines</i> or portions thereof are not required to be open to the room in which they are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the <i>mezzanine</i> area. 2. In buildings that are not more than two stories above <i>grade plane</i> and equipped throughout with an automatic sprinkler system in accordance with Section R313, a <i>mezzanine</i> shall not be required to be open to the room in which the <i>mezzanine</i> is located. 		X			Increased safety.
RB153-22	<p>Add new text as follows: SECTION R326 SLEEPING LOFTS R326.1 Sleeping lofts. <u>Where provided in dwelling units or sleeping units, sleeping lofts shall comply with this code as modified by Sections R326.2 through R326.5. Sleeping lofts</u></p>		X			Clarification.

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	<p>constructed in compliance with this section shall be considered a portion of the story below. Such sleeping lofts shall not contribute to the number of stories as regulated by this code.</p> <p>Exception: Sleeping lofts need not comply with Section R326 where they meet any of the following conditions:</p> <ol style="list-style-type: none"> The sleeping loft has a maximum depth of less than 3 feet (914 mm). The sleeping loft has a floor area of less than 35 square feet (3.3 m). The sleeping loft is not provided with a permanent means of egress. <p>R326.2 Sleeping loft limitations. Sleeping lofts shall comply with the following conditions:</p> <ol style="list-style-type: none"> The sleeping loft floor area shall be less than 70 square feet (6.5 m). The sleeping loft ceiling height shall not exceed 7 feet (2134 mm) for more than one-half of the sleeping loft floor area. <p>The provisions of Sections R326.3 through R326.5 shall not apply to sleeping lofts that do not comply with Items 1 and 2.</p> <p>R326.3 Sleeping loft ceiling height. The clear height below the sleeping loft floor construction shall not be less than 7 feet (2134 mm). The ceiling height above the finished floor of the sleeping loft shall not be less than 3 feet (914 mm). Spaces adjacent to the sleeping loft with a sloped ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not contribute to the sleeping loft floor area.</p> <p>R326.4 Sleeping loft area. The aggregate area of all sleeping lofts and mezzanines within a room shall comply with Section R325.3.</p> <p>Exception: The area of a single sleeping loft located within a dwelling unit or sleeping unit equipped with an automatic sprinkler system in accordance with Section P2094 shall not be greater than two-thirds of the area of the room in which it is located, provided that no other sleeping lofts or mezzanines are open to the room in which the sleeping loft is located.</p> <p>R326.5 Permanent egress for sleeping lofts. A permanent means of egress shall be provided for sleeping lofts. The means of egress shall comply with Section 311 as modified by Sections R326.5.1 through R326.5.3.</p>					

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	<p><u>R326.5.1 Ceiling height at sleeping loft means of egress.</u> A minimum ceiling height of 3 feet (914 mm) shall be provided for the entire width of the means of egress from the sleeping loft.</p> <p><u>R326.5.2 Stairways.</u> Stairways providing egress from sleeping lofts shall be permitted to comply with Sections R326.5.2.1 through R326.5.2.3.</p> <p><u>R326.5.2.1 Width.</u> Stairways providing egress from a sleeping loft shall not be less than 17 inches (432 mm) in clear width at or above the handrail. The width below the handrail shall be not less than 20 inches (508 mm).</p> <p><u>R326.5.2.2 Treads and risers.</u> Risers for stairs providing egress from a sleeping loft shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:</p> <ol style="list-style-type: none"> <u>The tread depth shall be 20 inches (508 mm) minus four-thirds of the riser height.</u> <u>The riser height shall be 15 inches (381 mm) minus three-fourths of the tread depth.</u> <p><u>R326.5.2.3 Landings.</u> Landings at stairways providing egress from sleeping lofts shall comply with Section R311.7.6, except that the depth of landings in the direction of travel shall be not less than 24 inches (508 mm).</p> <p><u>R326.5.3 Ladders.</u> Ladders complying with Sections R326.5.3.1 and R326.5.3.2 shall be permitted as a means of egress from sleeping lofts.</p> <p><u>R326.5.3.1 Size and capacity.</u> Ladders providing egress from sleeping lofts shall have a rung width of not less than 12 inches (305 mm), and 10-inch (254 mm) to 14-inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 300-pound (136 kg) load on any rung. Rung spacing shall be uniform within 3/8 inch (9.5 mm).</p> <p><u>R326.5.3.2 Incline.</u> Ladders shall be inclined at 70 to 80 degrees from horizontal.</p> <p>SECTION R314 SMOKE ALARMS</p> <p>Revise as follows:</p> <p>R314.3 Location. Smoke alarms shall be installed in the following locations:</p> <ol style="list-style-type: none"> In each sleeping room. 					

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	<p>2. Outside each separate sleeping area in the immediate vicinity of the bedrooms <u>and sleeping lofts</u>.</p> <p>3. On each additional story of the <i>dwelling</i>, including <i>basements</i> and <i>habitable attics</i> and not including crawl spaces and uninhabitable <i>attics</i>. In <i>dwellings</i> or <i>dwelling units</i> with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full <i>story</i> below the upper level.</p> <p>4. Not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by this section.</p> <p>5. In the hallway and in the room open to the hallway <i>indwelling units</i> where the ceiling height of a room open to a hallway serving bedrooms exceeds that of the hallway by 24 inches (610 mm) or more.</p> <p>6. Within the room to which a sleeping loft is open, in the immediate vicinity of the sleeping loft.</p> <p>SECTION R325 MEZZANINES Revise as follows: R325.1 General. <i>Mezzanines</i> shall comply with Sections R325 through R325.5. <u>Exception: Sleeping lofts in dwelling units and sleeping units shall be permitted to comply with Section R326, subject to the limitations in Section R326.2.</u></p> <p>SECTION R310 EMERGENCY ESCAPE AND RESCUE OPENINGS R310.1 Emergency escape and rescue opening required. <u><i>Basements, habitable attics, the room to which a sleeping loft is open,</i></u> and every sleeping room shall have not less than one operable <i>emergency escape and rescue opening</i>. Where <i>basements</i> contain one or more sleeping rooms, an <i>emergency escape and rescue opening</i> shall be required in each sleeping room. <i>Emergency escape and rescue openings</i> shall open directly into a <i>public way</i>, or to a <i>yard</i> or court having a minimum width of 36 inches (914 mm) that opens to a <i>public way</i>. Exceptions: 1. <i>Storm shelters</i> and <i>basements</i> used only to house mechanical <i>equipment</i> not exceeding a total floor area of 200 square feet (18.58 m²).</p>					

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	2. 3.					
RB154-22	<p>Revise as follows:</p> <p>R326.3 Story above grade plane. A habitable attic shall be considered a story above grade plane.</p> <p>Exceptions: A habitable attic shall not be considered to be a story above grade plane provided that the habitable attic meets all the following:</p> <ol style="list-style-type: none"> 1. The aggregate area of the habitable attic is either of the following: <ol style="list-style-type: none"> 1.1 Not greater than one-third of the floor area of the story below. 1.2 Not greater than one-half of the floor area of the story below where the habitable attic is located within a dwelling unit equipped with a fire sprinkler system in accordance with Section P2904. 2. The occupiable space is enclosed by the roof assembly above, knee walls, if applicable, on the sides and the floor-ceiling assembly below. 3. The floor of the habitable attic does not extend beyond the exterior walls of the story below. 4. Where a habitable attic is located above a third story, the dwelling unit or townhouse unit shall be equipped with a fire sprinkler system in accordance with Section P2904 <u>shall be installed in the habitable attic and remaining portion of the townhouse unit or dwelling unit or units located beneath the habitable attic.</u> 		X			Clarification.
RB157-22	<p>Revise as follows:</p> <p>R328.4 Locations. ESS shall be installed only in the following locations:</p> <ol style="list-style-type: none"> 1. Detached garages and detached accessory structures. 2. Attached garages separated from the dwelling unit living space in accordance with Section R302.6. 3. Outdoors or on the exterior side of exterior walls located not less than 3 feet (914 mm) from doors and windows directly entering the dwelling unit. 4. Enclosed utility closets, basements, storage or utility spaces within dwelling units with finished or noncombustible walls and ceilings. Walls and ceilings of unfinished wood-framed construction shall be provided with not less than ⁵/₈-inch 			X	Minimal.	Increased safety.

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	<p>(15.9 mm) Type X gypsum wallboard. <u>Openings shall be equipped with solid wood doors not less than 1-3/8 inches (35 mm) in thickness, solid or honeycomb- core steel doors not less than 1-3/8 inches (35 mm) thick, or door with a 20-minute fire protection rating. Doors shall be self-latching and equipped with a self-closing or automatic-closing device. Penetrations through the required gypsum wallboard into the dwelling shall be protected as required by Section R302.11, Item 4.</u></p> <p>ESS shall not be installed in sleeping rooms, or closets or spaces opening directly into sleeping rooms.</p>					
RB158-22	<p>Revise as follows: R328.1 General. <i>Energy storage systems (ESS) shall comply with the provisions of this section.</i> Exceptions: 1. <i>ESS listed and labeled for use in habitable spaces in accordance with UL 9540 and marked “For Suitable for use in residential dwelling units habitable spaces” where installed in accordance with the listing, the manufacturer’s instructions and NFPA 70.</i> 2. <i>ESS less than 1 kWh (3.6 megajoules).</i></p>		X			Editorial.
RB161-22	<p>Revise as follows: R328.8 Protection from impact. <i>ESS installed in a location subject to vehicle damage shall be protected by approved barriers in accordance with Section R328.8.1 or R328.8.2.</i> Add new text as follows: R328.8.1 Garages. <u>Where an ESS is installed in the normal driving path of vehicle travel within a garage, impact protection complying with Section R328.8.3 shall be provided. The normal driving path is a space between the garage vehicle opening and the interior face of the back wall to a height of 48 inches (1219 mm) above the finished floor. The width of the normal driving path shall be equal to the width of the garage door opening. Impact protection shall also be provided for an ESS installed at either of the following locations (see Figure R328.8.1):</u> 1. <u>On the interior face of the back wall and located within 36 inches (914 mm) to the left or to the right of the normal driving path.</u></p>		X			Clarification.

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	<p>2. <u>On the interior face of a side wall and located within 24 inches (610 mm) from the back wall and 36 inches (914 mm) of the normal driving path.</u> Exception: Where the clear height of the vehicle garage opening is 7 feet 6 inch (2286 mm) or less, ESS installed not less than 36 inches (914 mm) above finished floor are not subject to vehicle impact protection requirements.</p> <p>R328.8.2 Other locations subject to vehicle impact. Where an ESS is installed in a location other than as defined in Section R328.8.1, and is subject to vehicle damage, impact protection shall be provided in accordance with Section R328.8.3.</p> <p>R328.8.3 Impact protection options. ESS protection shall comply with one of the following:</p> <p>1. <u>Bollards constructed in accordance with one of the following:</u></p> <p>1.1. <u>Minimum 48 inches (1219 mm) in length by 3 inches (76 mm) in diameter schedule 80 steel pipe embedded in a concrete pier not less than 12 inches (304 mm) deep and 6 inches (152 mm) in diameter, with at least 36 inches (914 mm) of pipe exposed, filled with concrete, and spaced at a maximum interval of 5 feet (1524 mm). Each bollard shall be located not less than 6 inches (152 mm) from an ESS.</u></p> <p>1.2. <u>Minimum 36 inches (914 mm) in height by 3 inches (76 mm) in diameter schedule 80 steel pipe fully welded to a minimum 8 inches (203 mm) by ¼ inch (6.4 mm) thick steel plate and bolted to a concrete floor by means of 4-1/2 inch (114 mm) concrete anchors with 3 inch (76 mm) minimum embedment. Spacing shall be not greater than 60 inches (1524 mm), and each bollard shall be located not less than 6 inches (152 mm) from the ESS.</u></p> <p>1.3. <u>Pre-manufactured steel pipe bollards filled with concrete and anchored in accordance with the manufacturer’s installation instructions, with spacing not greater than 60 inches (1524 mm). Each bollard shall be located not less than 6 inches (152 mm) from the ESS.</u></p> <p>2. <u>Wheel barriers constructed in accordance with one of the following:</u></p> <p>2.1. <u>Four inches (102 mm) in height by 5 inches (127 mm) in width by 70 inches (1778 mm) in length wheel barrier</u></p>					

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Sub Code:						
	<p><u>made of concrete or polymer, anchored to the concrete floor not less than every 36 inches (914 mm) and located not less than 54 inches (1372 mm) from the ESS. Minimum 3– ½ inch (90 mm) diameter concrete anchors with 3 inch (76 mm) embedment per barrier shall be used. Spacing between barriers shall be no greater than 36 inches (914 mm).</u></p> <p><u>2.2. Pre-manufactured wheel barriers shall be anchored in accordance with the manufacturer’s installation instructions.</u></p> <p><u>3. Approved method designed to resist a 2000 pounds per square foot (8899 Newtons) impact in the direction of travel at 24 inches (608 mm) above grade.</u></p>					
RB162-22	<p>Add new text as follows: <u>SECTION R331 ALTERATIONS</u> <u>SECTION AJ109 ALTERATIONS</u> <u>AJ109.4 Structural.</u> The minimum design loads for the structure shall be the loads applicable at the time the building was constructed, provided that a dangerous condition is not created. Structural elements that are uncovered during the course of the alteration and that are found to be unsound or dangerous shall be made to comply with the applicable requirements of this code. <u>R331.1 AJ109.4 Alterations to an existing building.</u> <u>Where an existing building with the alteration is within the scope of the International Residential Code, alterations to the existing building shall comply with this section and other applicable provisions of this code. New elements shall meet all of the requirements of this code for new construction. Engineered design in accordance with Section R301.1.3 shall be permitted to meet the requirements of this section. Alterations shall not cause the existing building to become less compliant with the provisions of this code for new construction than the existing building was prior to the work.</u> <u>R331.1.1 AJ109.4.1 Decreased structural capacity Alterations that decrease structural capacity.</u> <u>Where an alteration causes a decrease in capacity in any structural component, that structural component shall be shown to comply or shall be altered to comply with the applicable provisions of Chapters 3, 4, 5, 6, and 8.</u></p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R331.1.2.2 AJ109.4.2 Increased design loads Alterations that increase structural loads. <u>Where an alteration causes an increase in loads as described in this section, the existing structural components that support the increased load, including the foundation, shall be shown to comply or shall be altered to comply with the applicable provisions of Chapters 3, 4, 5, 6, and 8. Existing structural components that do not provide support for the increased loads shall not be required to comply with this section.</u></p> <p>R331.1.2.1 AJ109.4.2.1 Dead load increase. <u>Dead load shall be considered to be increased for purposes of this section when the weight of materials used for the alteration exceeds the weight of the materials replaced, or when new materials or elements are added.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Buildings in which the increase in dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.</u> <u>Installation of rooftop-mounted photovoltaic (PV) panel systems weighing 4 pounds per square foot or less over an existing single layer of roof covering.</u> <p><u>These exceptions shall not be applied simultaneously.</u></p> <p>R331.1.2.2 AJ109.4.2.2 Live load increase. <u>An increase in live load shall be determined based on Table R301.5.</u></p> <p>R331.1.2.3 AJ109.4.2.3 Snow load increase. <u>Snow load shall be considered to be increased for purposes of this section when alteration of the roof configuration creates new areas that accumulate drifted snow.</u></p> <p>R331.1.2.4 AJ109.4.2.4 Wind load increase. <u>Wind load shall be considered to be increased for purposes of this section when the surface area of any exterior elevation subject to wind pressure is increased by more than 5%.</u></p> <p>R331.1.2.5 AJ109.4.2.5 Seismic load increase. <u>Seismic load shall be considered to be increased for purposes of this section where the actual dead load has increased by more than 5% in existing buildings assigned to Seismic Design Category C, D₀, D₁, or D₂ and subject to the seismic provisions of Section R301.2.2. where new materials replace lighter weight materials in one of the following conditions:</u></p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>1. <u>Concrete tile or tile roof covering of similar weight is installed on more than 50% of the total roof area.</u></p> <p>2. <u>Brick veneer or cladding of similar weight is installed on walls above the second story.</u></p>					
RB163-22	<p>Add new text as follows: SECTION AJ110 R331 ADDITIONS AJ110.1 R331.1 Additions to an existing building. <i>Where existing buildings with the addition are within the scope of the International Residential Code, additions shall comply with this section and other applicable provisions of this code. Engineered design in accordance with Section R301.1.3 shall be permitted to meet the requirements of this section.</i> AJ110.2 R331.1.1 Structure for Horizontal Additions Horizontal Attached Addition. <i>Where an addition involves new construction next to and attached to an existing building and includes alterations to the existing building, the new construction shall meet all of the structural requirements of this code for new construction. Alterations to the existing building shall comply with the requirements governing alterations within this code. In wood light-frame additions, connection of the structural components shall be permitted to be provided using wall top plates and addition studs that abut the existing building. Wall top plates shall be lapped and spliced in accordance with Section R602.3.2. Abutting studs shall be fastened in accordance with Table R602.3(1). The addition structural components shall be connected to the existing building in accordance with accepted engineering practice.</i> Exception: <i>The addition structural components shall be connected to the existing building in accordance with accepted engineering practice. In wood light frame additions, connection of the structural components shall be permitted to be provided using wall top plates and addition studs that abut the existing building. Wall top plates shall be lapped and spliced in accordance with Section R602.3.2. Abutting studs shall be fastened in accordance with Table R602.3(1).</i> R331.1.2 Horizontal Detached Addition. <i>Where an addition involves new construction next to an existing building, without structural alterations to the existing building, the existing building need not comply with the requirements of this code for new construction. The addition shall meet all of the requirements of this code for new construction and a minimum clear space not less than 6 inches shall be provided between the addition structural components and the existing building. Exterior and interior finish materials and non-structural framing infill shall be permitted to bridge the clear space between the addition and existing building. Existing foundations shall not be used to support the addition.</i> Exceptions:</p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>1. At parallel wall lines between the existing building and the addition, the existing foundation is permitted to be altered to support the addition provided the modified foundation is designed in accordance with Section R301.1.3.</p> <p>2. At parallel wall lines between the existing building and the addition, an existing window opening is permitted to be altered to create a shared door, provided there are no modifications to the existing wall framing above and beside the existing opening, or to the existing braced wall panels.</p> <p>AJ110.3 R331.1.3 Structure for Vertical Additions Vertical Addition. Where an addition involves new construction that adds a story to any part of the existing building or vertically increases the height of any part of the existing building, the new construction and the existing building together shall meet all of be shown to comply with or altered to comply with all of the structural requirements of this code for new construction. <u>Exception:</u> Where the new structure and the existing structure together are evaluated in accordance with accepted engineering practice and are shown to be sufficient to support the combined loads from the new structure and existing structure, no structural alterations are required.</p>					
R165-22	<p>Revise as follows:</p> <p>R310.4.3 Drainage. Area wells shall be designed for proper drainage by connecting to the building’s foundation drainage system required by Section R405.1. Exception: A drainage system for area wells is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, as detailed in Table R401.4.1(2) R405.1.</p> <p>R401.4.1 Geotechnical evaluation. In lieu of a complete geotechnical evaluation, the load-bearing values in Table R401.4.1(1) and the soil classifications in Table R401.4.1(2) shall be assumed.</p> <p>TABLE R401.4.1(2) R405.1 PROPERTIES OF SOILS CLASSIFIED ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM</p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

SOIL GROUP	UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOL	SOIL DESCRIPTION	USDA TEXTURAL SOIL CLASSIFICATION	DRAINAGE CHARACTERISTICS ^a	FROST HEAVE POTENTIAL	VOLUME CHANGE POTENTIAL EXPANSION ^b
Group I	GW	Well-graded gravels, gravel sand mixtures, little or no fines	N/A	Good	Low	Low
	GP	Poorly graded gravels or gravel sand mixtures, little or no fines	N/A	Good	Low	Low
	SW	Well-graded sands, gravelly sands, little or no fines	N/A	Good	Low	Low
	SP	Poorly graded sands or gravelly sands, little or no fines	Sand	Good	Low	Low
	GM	Silty gravels, gravel-sand-silt mixtures	N/A	Good	Medium	Low
	SM	Silty sand, sand-silt mixtures	Loamy Sand, Sandy Loam	Good	Medium	Low
Group II	GC	Clayey gravels, gravel-sand-clay mixtures	N/A	Medium	Medium	Low
	SC	Clayey sands, sand-clay mixture	Sandy Clay Loam, Sandy Clay	Medium	Medium	Low
	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	Silt, Silt Loam	Medium	High	Low
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	Loam, Clay Loam, Silt, Clay Loam	Medium	Medium	Medium to Low
Group III	CH	Inorganic clays of high plasticity, fat clays	Clay, Silty Clay	Poor ^c	Medium	High
	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	N/A	Poor ^c	High	High
Group IV	OL	Organic silts and organic silty clays of low plasticity	N/A	Poor ^c	Medium	Medium
	OH	Organic clays of medium to high plasticity, organic silts	N/A	Unsatisfactory ^c	Medium	High
	Pt	Peat and other highly organic soils	N/A	Unsatisfactory ^c	Medium	High

For SI: 1 inch = 25.4 mm.

- The percolation rate for good drainage is over 4 inches per hour, medium drainage is 2 inches to 4 inches per hour, and poor is less than 2 inches per hour.
- Soils with a low potential expansion typically have a plasticity index (PI) of 0 to 15, soils with a medium potential expansion have a PI of 10 to 35 and soils with a high potential expansion have a PI greater than 20.
- Unsuitable as backfill material.

R403.3.3 Drainage. Final grade shall be sloped in accordance with Section R401.3. In other than Group I Soils, as detailed in Table R401.4.1(2) R405.1, gravel or crushed stone beneath horizontal insulation below ground shall drain to daylight or into an approved sewer system.

TABLE R403.4 MINIMUM DEPTH (D) AND WIDTH (W) OF CRUSHED STONE FOOTINGS^{a, b} (inches)

Portions of table not shown remain unchanged.

- Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R401.4.1(2) R405.1.

TABLE R404.1.1(1) PLAIN MASONRY FOUNDATION WALLS^f

Portions of table not shown remain unchanged.

- Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R401.4.1(2) R405.1.

TABLE R404.1.1(2) 8-INCH MASONRY FOUNDATION WALLS WITH REINFORCING WHERE d ≥ 5 INCHES^{a, c, f}

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Portions of table not shown remain unchanged.</p> <p>d. Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist conditions without hydrostatic pressure. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.1(3) 10-INCH MASONRY FOUNDATION WALLS WITH REINFORCING WHERE $d \geq 6.75$ INCHES^{a, c, f}</p> <p>Portions of table not shown remain unchanged.</p> <p>d. Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist conditions without hydrostatic pressure. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.1(4) 12-INCH MASONRY FOUNDATION WALLS WITH REINFORCING WHERE $d \geq 8.75$ INCHES^{a, c, f}</p> <p>Portions of table not shown remain unchanged.</p> <p>d. Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist conditions without hydrostatic pressure. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.2(2) MINIMUM VERTICAL REINFORCEMENT FOR 6-INCH NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, g, h, i, j, k}</p> <p>Portions of table not shown remain unchanged.</p> <p>a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.2(3) MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, g, h, i, j, k}</p> <p>Portions of table not shown remain unchanged.</p> <p>a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.2(4) MINIMUM VERTICAL REINFORCEMENT FOR 10-INCH NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, g, h, i, j, k}</p> <p>Portions of table not shown remain unchanged.</p> <p>a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.2(5) MINIMUM VERTICAL WALL REINFORCEMENT FOR 6-INCH WAFFLE-GRID BASEMENT WALLS^{b, c, d, e, g, h, i, j}</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Portions of table not shown remain unchanged.</p> <p>a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.2(6) MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH WAFFLE-GRID BASEMENT WALLS^{b, c, d, e, f, h, i, j, k}</p> <p>Portions of table not shown remain unchanged.</p> <p>a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.2(7) MINIMUM VERTICAL REINFORCEMENT FOR 6-INCH (152 mm) SCREEN-GRID BASEMENT WALLS^{b, c, d, e, f, h, i, j, k}</p> <p>Portions of table not shown remain unchanged.</p> <p>a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table <u>R401.4.1(2)</u> R405.1.</p> <p>TABLE R404.1.2(8) MINIMUM VERTICAL REINFORCEMENT FOR 6-, 8-, 10- AND 12-INCH NOMINAL FLAT BASEMENT WALLS^{b, c, d, e, f, h, i, j, k}</p> <p>Portions of table not shown remain unchanged.</p> <p>a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R401.4.1(2) R405.1.</p> <p>R405.1 Concrete or masonry foundations. Drains shall be provided around concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the top of the footing or below the bottom of the slab and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend not less than 1 foot (305 mm) beyond the outside edge of the footing and 6 inches (152 mm) above the top of the footing and be covered with an approved filter membrane material. The top of open joints of drain tiles shall be protected with strips of building paper. Except where otherwise recommended by the drain manufacturer, perforated drains shall be surrounded with an approved filter membrane or the filter membrane shall cover the washed gravel or crushed rock covering the drain. Drainage tiles or perforated pipe shall be placed on not less than 2 inches (51 mm) of washed gravel or crushed rock not less than one sieve size larger than the tile joint opening or perforation and covered with not less than 6 inches (152 mm) of the same material.</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Exception: A drainage system is not required where the foundation is installed on well-drained ground or sand-gravel mixture soils according to the Unified Soil Classification System, Group I soils, as detailed in Table R401.4.1(2) R405.1.</p> <p>R506.2.2 Base. A 4-inch-thick (102 mm) base course consisting of clean graded sand, gravel, crushed stone, crushed concrete or crushed blast-furnace slag passing a 2-inch (51 mm) sieve shall be placed on the prepared subgrade where the slab is below grade.</p> <p>Exception: A base course is not required where the concrete slab is installed on well-drained or sand-gravel mixture soils classified as Group I according to the United Soil Classification System in accordance with Table <u>R401.4.1(2)</u> R405.1.</p>					
RB166-22	<p>Revise as follows:</p> <p>R403.1.1 Minimum size. The minimum width, W, and thickness, T, for concrete footings shall be in accordance with Tables R403.1(1) through R403.1(3) and Figure R403.1(1) or R403.1.3, as applicable, but not less than 12 inches (305 mm) in width and 6 inches (152 mm) in depth. The footing width shall be based on the load-bearing value of the soil in accordance with Table R401.4.1. Footing projections, P, shall be not less than 2 inches (51 mm) and shall not exceed the thickness of the footing. Footing thickness and projection for fireplaces shall be in accordance with Section R1001.2. The size of footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R401.4.1. Footings for wood foundations shall be in accordance with the details set forth in Section R403.2, and Figures R403.1(2) and R403.1(3). Footings for precast foundations shall be in accordance with the details set forth in Section R403.4, Table R403.4, and Figures R403.4(1) and R403.4(2). <u>Crushed stone footings for masonry or cast-in-place concrete foundations shall be in accordance with Section R403.5.</u></p> <p>Add new text as follows:</p> <p><u>R403.5 Crushed stone footings for cast-in-place concrete foundations.</u> Crushed stone footings for masonry or cast-in-place concrete foundations complying in accordance with <u>Section R403.4.1 shall comply be permitted for non-retaining cast-in-place concrete foundations complying with Section R404.1 R404.1.3 and this section except they.</u>The footing and</p>		X		Adds design options.	

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																		
		Decrease	Neutral	Increase																				
Sub Code:																								
	<p>foundation wall shall be installed in accordance with Figures R403.5(1), or Figure R403.5(2) and Table R403.5, or Figure R403.5(3). Crushed stone footings for cast-in-place concrete foundations shall be permitted for townhouses in Seismic Design Categories A and B and one- and two-family dwellings in Seismic Design Categories A, B and C.</p> <p>TABLE R403.5 MINIMUM CAST-IN-PLACE CONCRETE FOUNDATION WALL DIMENSIONS, REINFORCEMENT, AND MAXIMUM BRACED WALL LINE SPACING</p> <table border="1"> <thead> <tr> <th>WIND EXPOSURE CATEGORY</th> <th>ULTIMATE DESIGN WIND SPEED (MPH)</th> <th>MIN. STEM WALL WIDTH (IN.)</th> <th>MIN. STEM WALL HEIGHT (IN.)</th> <th>MIN. HORIZONTAL REBAR</th> <th>MAX. BRACED WALL LINE SPACING (FT.)</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>< 140</td> <td>6</td> <td>12</td> <td>(2) - #4</td> <td>28</td> </tr> <tr> <td>C and D</td> <td>< 140</td> <td>8</td> <td>18</td> <td>(3) - #4</td> <td>25</td> </tr> </tbody> </table>	WIND EXPOSURE CATEGORY	ULTIMATE DESIGN WIND SPEED (MPH)	MIN. STEM WALL WIDTH (IN.)	MIN. STEM WALL HEIGHT (IN.)	MIN. HORIZONTAL REBAR	MAX. BRACED WALL LINE SPACING (FT.)	B	< 140	6	12	(2) - #4	28	C and D	< 140	8	18	(3) - #4	25					
WIND EXPOSURE CATEGORY	ULTIMATE DESIGN WIND SPEED (MPH)	MIN. STEM WALL WIDTH (IN.)	MIN. STEM WALL HEIGHT (IN.)	MIN. HORIZONTAL REBAR	MAX. BRACED WALL LINE SPACING (FT.)																			
B	< 140	6	12	(2) - #4	28																			
C and D	< 140	8	18	(3) - #4	25																			
RB168-22	<p>Revise as follows:</p> <p>TABLE R404.1.1(1) PLAIN MASONRY FOUNDATION WALLS^f Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>WIND EXPOSURE CATEGORY</th> <th>ULTIMATE DESIGN WIND SPEED (MPH)</th> <th>MIN. STEM WALL WIDTH (IN.)</th> <th>MIN. STEM WALL HEIGHT (IN.)</th> <th>MIN. HORIZONTAL REBAR</th> <th>MAX. BRACED WALL LINE SPACING (FT.)</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>< 140</td> <td>6</td> <td>12</td> <td>(2) - #4</td> <td>28</td> </tr> <tr> <td>C and D</td> <td>< 140</td> <td>8</td> <td>18</td> <td>(3) - #4</td> <td>25</td> </tr> </tbody> </table>	WIND EXPOSURE CATEGORY	ULTIMATE DESIGN WIND SPEED (MPH)	MIN. STEM WALL WIDTH (IN.)	MIN. STEM WALL HEIGHT (IN.)	MIN. HORIZONTAL REBAR	MAX. BRACED WALL LINE SPACING (FT.)	B	< 140	6	12	(2) - #4	28	C and D	< 140	8	18	(3) - #4	25		X			Editorial.
WIND EXPOSURE CATEGORY	ULTIMATE DESIGN WIND SPEED (MPH)	MIN. STEM WALL WIDTH (IN.)	MIN. STEM WALL HEIGHT (IN.)	MIN. HORIZONTAL REBAR	MAX. BRACED WALL LINE SPACING (FT.)																			
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RB171-22	<p>Revise as follows:</p> <p>R404.1.2.1 Masonry foundation walls. <i>Concrete masonry and clay masonry</i> foundation walls shall be constructed as set forth in Table R404.1.1(1) <u>R404.1.2.1(1)</u>, R404.1.1(2) <u>R404.1.2.1(2)</u>, R404.1.1(3) <u>R404.1.2.1(3)</u> or R404.1.1(4) <u>R404.1.2.1(4)</u> and shall comply with applicable provisions of Section R606. In buildings assigned to <i>Seismic Design Categories</i> D₀, D₁ and D₂, <i>concrete masonry and clay masonry</i> foundation walls shall also comply with Section R404.1.4.1. Rubble stone masonry foundation walls shall be constructed in accordance with Sections R404.1.8 and R606.4.2. Rubble stone masonry walls shall not be used in <i>Seismic Design Categories</i> D₀, D₁ and D₂, or in <i>townhouses</i> in Seismic Design Category C.</p> <p>TABLE R404.1.1(1) <u>R404.1.2.1(1)</u> PLAIN MASONRY FOUNDATION WALLS^f Portions of table not shown remain unchanged.</p> <p>e. Wall construction shall be in accordance with Table R404.1.1(2) <u>R404.1.2.1(2)</u>, R404.1.1(3) <u>R404.1.2.1(3)</u> or R404.1.1(4) <u>R404.1.2.1(4)</u>, or a design shall be provided.</p> <p>TABLE R404.1.1(2) <u>R404.1.2.1(2)</u> 8-INCH MASONRY FOUNDATION WALLS WITH REINFORCING WHERE d ≥ 5 INCHES^{a, c, f} Portions of table not shown remain unchanged.</p>		X			Editorial.																		

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>TABLE R404.1.1(3)R404.1.2.1(3) 10-INCH MASONRY FOUNDATION WALLS WITH REINFORCING WHERE $d \geq 6.75$ INCHES^{a, c, f} Portions of table not shown remain unchanged.</p> <p>TABLE R404.1.1(4)R404.1.2.1(4) 12-INCH MASONRY FOUNDATION WALLS WITH REINFORCING WHERE $d \geq 8.75$ INCHES^{a, c, f} Portions of table not shown remain unchanged.</p> <p>R404.1.3.2 Reinforcement for foundation walls. Concrete foundation walls shall be laterally supported at the top and bottom. Horizontal reinforcement shall be provided in accordance with Table R404.1.2(1) <u>R404.1.3.2(1)</u>. Vertical reinforcement shall be provided in accordance with Table R404.1.2(2)<u>R404.1.3.2(2)</u>, R404.1.2(3)<u>R404.1.3.2(3)</u>, R404.1.2(4) <u>R404.1.3.2(4)</u>, R404.1.2(5) <u>R404.1.3.2(5)</u>, R404.1.2(6) <u>R404.1.3.2(6)</u>, R404.1.2(7) <u>R404.1.3.2(7)</u> or R404.1.2(8) <u>R404.1.3.2(8)</u>. Vertical reinforcement for flat <i>basement</i> walls retaining 4 feet (1219 mm) or more of unbalanced backfill is permitted to be determined in accordance with Table R404.1.2(9) <u>R404.1.3.2(9)</u>. For <i>basement</i> walls supporting above-grade concrete walls, vertical reinforcement shall be the greater of that required by Tables R404.1.2(2) <u>R404.1.3.2(2)</u> through R404.1.2(8) <u>R404.1.3.2(8)</u> or by Section R608.6 for the above-grade wall. In buildings assigned to Seismic Design Category D₀, D₁ or D₂, concrete foundation walls shall also comply with Section R404.1.4.2.</p> <p>TABLE R404.1.2(1) R404.1.3.2(1) MINIMUM HORIZONTAL REINFORCEMENT FOR CONCRETE BASEMENT WALLS^{a, b} Portions of table not shown remain unchanged.</p> <p>TABLE R404.1.2(2) R404.1.3.2(2) MINIMUM VERTICAL REINFORCEMENT FOR 6-INCH NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, g, h, i, j, k} Portions of table not shown remain unchanged.</p> <p>c. Vertical reinforcement with a yield strength of less than 60,000 psi and bars of a different size than specified in the table are permitted in accordance with Section R404.1.3.3.7.6 and Table R404.1.2(9) <u>R404.1.3.2(9)</u>.</p> <p>TABLE R404.1.2(3) R404.1.3.2(3) MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH (203mm) NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, g, h, i, j, k} Portions of table not shown remain unchanged.</p> <p>c. Vertical reinforcement with a yield strength of less than 60,000 psi and bars of a different size than specified in the table are permitted in accordance with Section R404.1.3.3.7.6 and Table R404.1.2(9) <u>R404.1.3.2(9)</u>.</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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		Decrease	Neutral	Increase		
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	<p>TABLE R404.1.2(4) R404.1.3.2(4) MINIMUM VERTICAL REINFORCEMENT FOR 10-INCH NOMINAL FLAT CONCRETE BASEMENT WALLS^{b, c, d, e, f, h, i, j} Portions of table not shown remain unchanged. c. Vertical reinforcement with a yield strength of less than 60,000 psi and bars of a different size than specified in the table are permitted in accordance with Section R404.1.3.3.7.6 and Table R404.1.2(9) R404.1.3.2(9).</p> <p>TABLE R404.1.2(5) R404.1.3.2(5) MINIMUM VERTICAL WALL REINFORCEMENT FOR 6-INCH WAFFLE-GRID BASEMENT WALLS^{b, c, d, e, g, h, i, j} Portions of table not shown remain unchanged. c. Maximum spacings shown are the values calculated for the specified bar size. Where the bar used is Grade 60 and the size specified in the table, the actual spacing in the wall shall not exceed a whole-number multiple of 12 inches (12, 24, 36 and 48) that is less than or equal to the tabulated spacing. Vertical reinforcement with a yield strength of less than 60,000 psi and bars of a different size than specified in the table are permitted in accordance with Section R404.1.3.3.7.6 and Table R404.1.2(9) R404.1.3.2(9).</p> <p>TABLE R404.1.2(6) R404.1.3.2(6) MINIMUM VERTICAL REINFORCEMENT FOR 8-INCH WAFFLE-GRID BASEMENT WALLS^{b, c, d, e, f, h, i, j, k} c. Maximum spacings shown are the values calculated for the specified bar size. Where the bar used is Grade 60 and the size specified in the table, the actual spacing in the wall shall not exceed a whole-number multiple of 12 inches (12, 24, 36 and 48) that is less than or equal to the tabulated spacing. Vertical reinforcement with a yield strength of less than 60,000 psi and bars of a different size than specified in the table are permitted in accordance with Section R404.1.3.3.7.6 and Table R404.1.2(9) R404.1.3.2(9).</p> <p>TABLE R404.1.2(7) R404.1.3.2(7) MINIMUM VERTICAL REINFORCEMENT FOR 6-INCH (152 mm) SCREEN-GRID BASEMENT WALLS^{b, c, d, e, g, h, i, j} Portions of table not shown remain unchanged. c. Maximum spacings shown are the values calculated for the specified bar size. Where the bar used is Grade 60 and the size specified in the table, the actual spacing in the wall shall not exceed a whole-number multiple of 12 inches (12, 24, 36 and 48) that is less than or equal to the tabulated spacing. Vertical reinforcement with a yield strength of less than 60,000 psi and bars of a different size than specified in the table are permitted in accordance with Section R404.1.3.3.7.6 and Table R404.1.2(9) R404.1.3.2(9).</p> <p>TABLE R404.1.2(8) R404.1.3.2(8) MINIMUM VERTICAL REINFORCEMENT FOR 6-, 8-, 10- AND 12-INCH NOMINAL FLAT BASEMENT WALLS^{b, c, d, e, f, h, i, k, n, o}</p>					

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>Portions of table not shown remain unchanged.</p> <p>c. Vertical reinforcement with a yield strength of less than 60,000 psi and bars of a different size than specified in the table are permitted in accordance with Section R404.1.3.3.7.6 and Table R404.1.2(9) <u>R404.1.3.2(9)</u>.</p> <p>TABLE R404.1.2(9) R404.1.3.2(9) MINIMUM SPACING FOR ALTERNATE BAR SIZE AND ALTERNATE GRADE OF STEEL^{a, b, c}</p> <p>Portions of table not shown remain unchanged.</p> <p>R404.1.3.3.7.2 Location of reinforcement in wall. The center of vertical reinforcement in <i>basement</i> walls determined from Tables R404.1.2(2) <u>R404.1.3.2(2)</u> through R404.1.2(7) <u>R404.1.3.2(7)</u> shall be located at the centerline of the wall. Vertical reinforcement in <i>basement</i> walls determined from Table R404.1.2(8) <u>R404.1.3.2(8)</u> shall be located to provide a maximum cover of 1¹/₄ inches (32 mm) measured from the inside face of the wall. Regardless of the table used to determine vertical wall reinforcement, the center of the steel shall not vary from the specified location by more than the greater of 10 percent of the wall thickness and 3³/₈ inch (10 mm). Horizontal and vertical reinforcement shall be located in foundation walls to provide the minimum cover required by Section R404.1.3.3.7.4.</p> <p>R404.1.3.3.7.6 Alternate grade of reinforcement and spacing. Where tables in Section R404.1.3.2 specify vertical wall reinforcement based on minimum bar size and maximum spacing, which are based on Grade 60 (414 MPa) steel reinforcement, different size bars or bars made from a different grade of steel are permitted provided that an equivalent area of steel per linear foot of wall is provided. Use of Table R404.1.2(9) <u>R404.1.3.2(9)</u> is permitted to determine the maximum bar spacing for different bar sizes than specified in the tables or bars made from a different grade of steel. Bars shall not be spaced less than one-half the wall thickness, or more than 48 inches (1219 mm) on center.</p> <p>R404.1.4.1 Masonry foundation walls. In buildings assigned to Seismic Design Category D₀, D₁ or D₂, as established in Table R301.2, masonry foundation walls shall comply with this section. In addition to the requirements of Table R404.1.1(1) <u>R404.1.2.1(1)</u>, plain masonry foundation walls shall comply with the following:</p> <ol style="list-style-type: none"> 1. Wall height shall not exceed 8 feet (2438 mm). 					

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	<p>2. Unbalanced backfill height shall not exceed 4 feet (1219 mm).</p> <p>3. Minimum nominal thickness for plain masonry foundation walls shall be 8 inches (203 mm).</p> <p>4. Masonry stem walls shall have a minimum vertical reinforcement of one No. 4 (No. 13) bar located not greater than 4 feet (1219 mm) on center in grouted cells. Vertical reinforcement shall be tied to the horizontal reinforcement in the footings.</p> <p>Foundation walls, supporting more than 4 feet (1219 mm) of unbalanced backfill or exceeding 8 feet (2438 mm) in height shall be constructed in accordance with Table R404.1.1(2) <u>R404.1.2.1(2)</u>, R404.1.1(3) <u>R404.1.2.1(3)</u> or R404.1.1(4) <u>R404.1.2.1(4)</u>. Masonry foundation walls shall have two No. 4 (No. 13) horizontal bars located in the upper 12 inches (305 mm) of the wall.</p> <p>R404.1.4.2 Concrete foundation walls. In buildings assigned to Seismic Design Category D₀, D₁ or D₂, as established in Table R301.2, concrete foundation walls that support light-frame walls shall comply with this section, and concrete foundation walls that support above-grade concrete walls shall comply with ACI 318, ACI 332 or PCA 100 (see Section R404.1.3). In addition to the horizontal reinforcement required by Table R404.1.2(1) <u>R404.1.3.2(1)</u>, plain concrete walls supporting light-frame walls shall comply with the following:</p> <ol style="list-style-type: none"> 1. Wall height shall not exceed 8 feet (2438 mm). 2. Unbalanced backfill height shall not exceed 4 feet (1219 mm). 3. Minimum thickness for plain concrete foundation walls shall be 7.5 inches (191 mm) except that 6 inches (152 mm) is permitted where the maximum wall height is 4 feet, 6 inches (1372 mm). <p>Foundation walls less than 7.5 inches (191 mm) in thickness, supporting more than 4 feet (1219 mm) of unbalanced backfill or exceeding 8 feet (2438 mm) in height shall be provided with horizontal reinforcement in accordance with Table R404.1.2(1) <u>R404.1.3.2(1)</u>, and vertical reinforcement in accordance with Table R404.1.2(2) <u>R404.1.3.2(2)</u>, R404.1.2(3) <u>R404.1.3.2(3)</u>, R404.1.2(4) <u>R404.1.3.2(4)</u>, R404.1.2(5) <u>R404.1.3.2(5)</u>,</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>R404.1.2(6) R404.1.3.2(6), R404.1.2(7) <u>R404.1.3.2(7)</u> or R404.1.2(8) <u>R404.1.3.2(8)</u>. Where Tables R404.1.2(2) <u>R404.1.3.2(2)</u> through R404.1.2(8) <u>R404.1.3.2(8)</u> permit plain concrete walls, not less than No. 4 (No. 13) vertical bars at a spacing not exceeding 48 inches (1219 mm) shall be provided.</p> <p>R404.1.5.2 Concrete wall thickness. The thickness of concrete foundation walls shall be equal to or greater than the thickness of the wall in the story above. Concrete foundation walls with corbels, brackets or other projections built into the wall for support of masonry veneer or other purposes are not within the scope of the tables in this section. Where a concrete foundation wall is reduced in thickness to provide a shelf for the support of masonry veneer, the reduced thickness shall be equal to or greater than the thickness of the wall in the story above. Vertical reinforcement for the foundation wall shall be based on Table R404.1.2(8) <u>R404.1.3.2(8)</u> and located in the wall as required by Section R404.1.3.3.7.2 where that table is used. Vertical reinforcement shall be based on the thickness of the thinner portion of the wall.</p> <p>Exception: Where the height of the reduced thickness portion measured to the underside of the floor assembly or sill plate above is less than or equal to 24 inches (610 mm) and the reduction in thickness does not exceed 4 inches (102 mm), the vertical reinforcement is permitted to be based on the thicker portion of the wall.</p>					
RB172-22	<p>Revise as follows:</p> <p>R502.3.3 Floor cantilevers. Floor cantilever spans shall not exceed the nominal depth of the wood floor joist. Floor cantilevers constructed in accordance with Table R502.3.3(1) shall be permitted where supporting a light-frame bearing wall and roof only. Floor cantilevers <u>constructed in accordance with Table R502.3.3(2) shall be permitted where supporting an exterior balcony are permitted to be constructed in accordance with Table R502.3.3(2). A full-depth rim joist shall be provided at the unsupported end of the cantilever joists. Solid blocking shall be provided at the support for the cantilever. Where the cantilever length is 24 inches (610 mm) or less and the building is assigned to Seismic Design Category A, B or C, solid blocking at the support for the cantilever shall not be required.</u></p>		X			Editorial.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>TABLE R502.3.3(1) CANTILEVER SPANS FOR FLOOR JOISTS SUPPORTING LIGHT-FRAME EXTERIOR BEARING WALL AND ROOF ONLY^{a, b, c, f, g, h} (Floor live load ≤ 40 psf, roof live load ≤ 20 psf) Portions of table not shown remain unchanged. g. A full-depth rim joist shall be provided at the unsupported end of the cantilever joists. Solid blocking shall be provided at the supported end. Where the cantilever length is 24 inches or less and the building is assigned to Seismic Design Category A, B or C, solid blocking at the support for the cantilever shall not be required.</p>					
RB173-22	<p>Add new text as follows: R502.11 Floor framing supporting guards. <u>The framing at the open edge of a floor supporting a required guard assembly not exceeding 44 inches (1118 mm) in height shall be constructed in accordance with Sections R502.11.1 or R502.11.2.2 for guard assemblies not exceeding 44 inches (1118mm) in height or shall be designed in accordance with accepted engineering practice to support the guard assembly. Where trusses and I-joists are prohibited as edge framing members supporting guards except where the effects of the guard loads shall be specifically considered in the design of the edge member.</u> R502.11.1 Conventional edge framing. <u>Where a roll brace is aligned with each guard post, the framing at the edge of the floor shall consist of a solid or built-up wood of lumber, structural glued laminated timber, or structural composite member having a minimum net width of 3 inches (76mm) and a minimum net depth of 9-1/4 inches (235 mm) and shall be braced to resist rotation by roll bracing as described in Section 502.11.3 with a roll brace aligned with each guard post.</u> 502.11.2 Timber edge framing. <u>Where a roll brace is aligned with each guard post, the framing at the edge of the floor shall consist of a minimum 6x10 sawn timber or a minimum 5-1/8 inch x 9-1/4 inch (130 mm x 235 mm) structural glued laminated timber and shall be braced to resist rotation by roll bracing as described in Section R502.11.3 at intervals of 48 inches (1219 mm) or less.</u> 502.11.3 Roll bracing. <u>Each roll brace shall be a joist or blocking matching the depth of the edge member and extending perpendicular to the edge member a minimum of 16 inches (406 mm) from the edge. Blocking shall have end connections with a minimum of six (6) – 16d common nails. Floor sheathing shall be continuous for a minimum of 24 inches (610 mm) from the edge and shall be fastened to each roll brace with a minimum of twelve (12) – 10d common nails and shall be fastened to the edge member with a minimum of twelve (12) – 10d common nails within 12 inches (305 mm) of the roll brace.</u></p>	X			Cost per blocking for each post at \$165-330 + engineering cost is eliminated.	Increased safety.

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RB174-22	<p>Revise as follows: R506.1 General. Concrete slab-on-ground floors shall be designed and constructed in accordance with the provisions of this section or ACI 332. <u>Such floors Floors</u> shall be a minimum 3½ inches (89 mm) thick (for <i>expansive soils</i>, see Section R403.1.8). The specified compressive strength of concrete shall be as set forth in Section R402.2.</p> <p>Add new text as follows: R506.2 Post-tensioned slab-on-ground floors. <u>Post-tensioned concrete slabs-on-ground floors placed on expansive or stable soils shall be designed in accordance with PTI DC10.5.</u></p>		X			Added standard for shallow concrete foundations on expansive and stable soils.
RB175-22	<p>Revise as follows: R506.2.3 Vapor retarder. A minimum 6 mil (0.006 inch; 152 µm) polyethylene or <u>approved 10-mil (0.010 inch; 0.254 mm)</u> vapor retarder conforming to ASTM E1745 Class A requirements with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where a base course does not exist.</p> <p>Exception: The vapor retarder is not required for the following:</p> <ol style="list-style-type: none"> Garages, utility buildings and other unheated <i>accessory structures</i>. For unheated storage rooms having an area of less than 70 square feet (6.5 m²) and carports. Driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date. Where <i>approved</i> by the <i>building official</i>, based on local site conditions. 	X			Cost reduced by \$540 to \$1,100	Reduction in cost.
RB176-22	<p>R317.1 Location required. Protection of wood and wood-based products from decay shall be provided in the following locations by the use of decay-resistant <i>naturally durable wood</i> or wood that is preservative-treated in accordance with AWPA U1:</p> <ol style="list-style-type: none"> Portions of wood structural members that form the structural supports of buildings, decks, balconies, porches or similar permanent building appurtenances where those members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering that 	X			Cost reduction where wood materials are not subject to decay.	Clarification.

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	<p>prevents would prevent moisture or water accumulation on the surface or at joints between members.</p> <p>Exception: Sawn lumber used in <u>structures</u> buildings located in a geographical region where experience has demonstrated that climatic conditions preclude the need to use naturally durable or preservative-treated wood where the structure is exposed to the weather.</p> <p>9. Wood columns in contact with basement floor slabs unless supported by concrete piers or metal pedestals projecting not less than 1 inch (25 mm) above the concrete floor and separated from the concrete pier by an impervious moisture barrier.</p> <p>R507.2.1 Wood materials. Wood structural members for joists, beams, and posts materials shall be No. 2 grade or better lumber, <u>protected from decay where required by Section R317.1 and R317.1.2, and protected from termites where required by Section R318.1.</u> preservative-treated in accordance with Section R317, or approved, naturally durable lumber, and termite protected where required in accordance with Section R318. Where design in accordance with Section R301 is provided, wood structural members shall be designed using the wet service factor defined in AWC NDS. <u>Sawn lumber for joists, beams and posts shall be No. 2 or better.</u> Cuts, notches and drilled holes of preservative-treated wood members shall be treated in accordance with Section R317.1.1. All preservative-treated wood products in contact with the ground shall be <i>labeled</i> for such usage.</p> <p>R507.9.1.1 Ledger details. Deck ledgers shall be a minimum 2-inch by 8-inch (51 mm by 203 mm) nominal, <u>No. 2 grade or better</u> pressure-preservative-treated Southern pine, incised pressure-preservative-treated hem-fir, or <i>approved</i>, decay-resistant <i>naturally durable wood</i>, No. 2 grade or better lumber. Deck ledgers shall not support concentrated loads from beams or girders. Deck ledgers shall not be supported on stone or masonry veneer.</p>					
RB177-22	<p>Revise as follows: TABLE R507.2.3 FASTENER AND CONNECTOR SPECIFICATIONS FOR DECKS^{a, b} Portions of table not shown remain unchanged.</p>		X			Clarification.

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	<table border="1"> <thead> <tr> <th>ITEM</th> <th>MATERIAL</th> <th>MINIMUM FINISH/COATING</th> <th>ALTERNATE FINISH/COATING*</th> </tr> </thead> <tbody> <tr> <td>Nails and glulam nips</td> <td>In accordance with ASTM F1997</td> <td>Hot-dipped galvanized per ASTM A153, Class D or ASTM A641, Class 35 for 3/8-inch diameter and less</td> <td>Stainless steel, silicon bronze or copper</td> </tr> <tr> <td>Bolts</td> <td>In accordance with ASTM A307 (bolts), ASTM A563 (nuts), ASTM F344 (washers)</td> <td>Hot-dipped galvanized per ASTM A153, Class C (Class D for 3/8-inch diameter and less) or mechanically galvanized per ASTM B695, Class 55 or 410 (stainless steel)</td> <td>Stainless steel, silicon bronze or copper</td> </tr> <tr> <td>Metal connectors</td> <td>Per manufacturer's specification</td> <td>ASTM A653 type G155 zinc-coated galvanized steel or post-hot-dipped galvanized per ASTM A103, providing a minimum average coating weight of 2.0 oz./ft.² (total both sides)</td> <td>Stainless steel</td> </tr> </tbody> </table>	ITEM	MATERIAL	MINIMUM FINISH/COATING	ALTERNATE FINISH/COATING*	Nails and glulam nips	In accordance with ASTM F1997	Hot-dipped galvanized per ASTM A153, Class D or ASTM A641, Class 35 for 3/8-inch diameter and less	Stainless steel, silicon bronze or copper	Bolts	In accordance with ASTM A307 (bolts), ASTM A563 (nuts), ASTM F344 (washers)	Hot-dipped galvanized per ASTM A153, Class C (Class D for 3/8-inch diameter and less) or mechanically galvanized per ASTM B695, Class 55 or 410 (stainless steel)	Stainless steel, silicon bronze or copper	Metal connectors	Per manufacturer's specification	ASTM A653 type G155 zinc-coated galvanized steel or post-hot-dipped galvanized per ASTM A103, providing a minimum average coating weight of 2.0 oz./ft. ² (total both sides)	Stainless steel							
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RB178-22	<p>Revise as follows:</p> <p>R507.2.3 Fasteners and connectors. Metal fasteners and connectors used for all decks shall be in accordance with Section R317.3 and Table R507.2.3. <u>Holes for through bolts shall be drilled to a diameter of 1/32" to 1/16" larger than the bolt diameter. Connectors shall be installed in accordance with the manufacturer's approved instructions.</u></p> <p>TABLE R507.2.3 FASTENER AND CONNECTOR SPECIFICATIONS FOR DECKS^{a, b}</p> <p>Portions of table not shown remain unchanged.</p> <p>c. Holes for bolts shall be drilled a minimum 1/32 inch and a maximum 1/16 inch larger than the bolt.</p> <p>d. Lag screws 1/2 inch and larger shall be predrilled to avoid wood splitting per the National Design Specification (NDS) for Wood Construction.</p> <p>R507.9.1.3 Ledger to band joist details. Fasteners used in deck ledger connections <u>Where ledgers are fastened</u> in accordance with Table R507.9.1.3(1), fasteners shall comply with Section R507.2.3 <u>be hot-dipped galvanized or stainless steel</u> and shall be installed in accordance with Table R507.9.1.3(2) and Figures R507.9.1.3(1) and R507.9.1.3(2). <u>Holes for 1/2-inch (12.7 mm) lag screws shall be predrilled with two drill bits so that a hole 1/2-inch (12.7mm) in diameter is drilled through the ledger and sheathing, if present and a hole 5/16-inch (7.9 mm) to 3/8 inch (9.5mm) in diameter shall be drilled through the band joist prior to lag screw installation. Holes 1/2-inch (12.7 mm) in diameter shall be drilled through the ledger and band joist prior to bolt installation.</u></p>		X				Clarification.																	
RB179-22	<p>Revise as follows:</p> <p>R507.3.1 Minimum size. The minimum size of concrete deck footings shall be in accordance with Table R507.3.1, based on the tributary area and allowable soil-bearing pressure in accordance with Table R401.4.1.</p> <p>TABLE R507.3.1 MINIMUM FOOTING SIZE FOR DECKS</p> <p>Portions of table not shown remain unchanged.</p> <p>f. Minimum thickness shall only apply to plain concrete footings.</p>		X				Clarification.																	
RB180-22	<p>Revise as follows:</p> <p>R507.4.1 Deck post to deck footing connection. Where posts bear on concrete footings in accordance with Section R403 and Figure R507.3, lateral restraint shall be provided by manufactured connectors or a</p>		X				Editorial.																	

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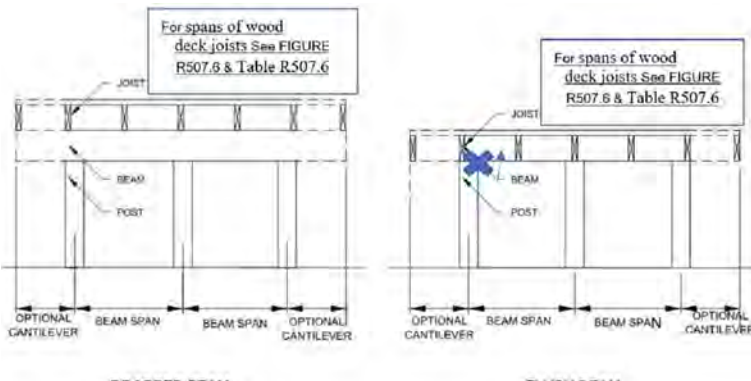
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		Decrease	Neutral	Increase		
Sub Code:						
	<p>minimum post embedment of 12 inches (305 mm) in surrounding soils or concrete piers. Other footing systems shall be permitted.</p> <p>Exception: Where expansive, compressible, shifting or other questionable soils are present, surrounding soils shall not be relied on for lateral support.</p>					
RB181-22	<p>Revise as follows:</p> <p>R507.4.1 Deck post to deck footing connection. Where posts bear on concrete footings in accordance with Section R403 and Figure R507.3, lateral restraint shall be provided by manufactured <u>approved</u> connectors or a minimum post embedment of 12 inches (305 mm) in surrounding soils or concrete piers. Other footing systems shall be permitted.</p> <p>Exception: Where expansive, compressible, shifting or other questionable soils are present, surrounding soils shall not be relied on for lateral support.</p>		X			Clarification.
RB182-22	<p>Revise as follows:</p>  <p align="center">FIGURE R507.5 TYPICAL DECK JOIST BEAM SPANS</p>		X			Clarification.
RB183-22	<p>Revise as follows:</p> <p>R507.5 Deck beams. Maximum allowable spans for wood deck beams, as shown in Figure R507.5, shall be in accordance with Tables R507.5(1) through R507.5(4) <u>and based on the joist span length and cantilever length as shown in Figure R507.6.</u> Beam plies shall be fastened together with two rows of 10d (3-inch x 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the actual beam span. Deck beams of other materials shall be permitted where designed in accordance with accepted engineering practices.</p> <p>TABLE R507.5(1) MAXIMUM DECK BEAM SPAN—40 PSF LIVE LOAD^c</p> <p>Portions of table not shown remain unchanged.</p>	X			More accurate sizing of beams may reduce cost.	Reformulation of code table for ease of use.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

TABLE R507.5(1) MAXIMUM DECK BEAM SPAN—40 PSF LIVE LOAD^a

JOIST SPAN	JOIST SPAN LENGTH & JOIST CANTILEVER LENGTH ^{b,c} (feet & inch)										
	E	E & 9	E & 1.5								
E											
8											
10											
12											
14											
16											
18											
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198											
200											

- a. Interpolation permitted for conditions with zero joist cantilever length. Extrapolation not permitted.
- j. For calculation of effective deck joist span, the actual joist span length shall be multiplied by the joist span factor in accordance with Table R507.5(5).

Delete without substitution:
TABLE R507.5(5) JOIST SPAN FACTORS FOR CALCULATING EFFECTIVE DECK JOIST SPAN [for use with Note j in Tables R507.5(1), R507.5(2), R507.5(3) and R507.5(4)]

RB184-22	Revise as follows: R507.5 Deck beams. Maximum allowable spans for wood deck beams, as shown in Figure R507.5, shall be in accordance with Tables R507.5(1) through R507.5(4). Beam plies shall be	X			Clarification.
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Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>fastened together with two rows of 10d (3-inch × 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the actual beam span. Deck beams of other materials shall be permitted where designed in accordance with accepted engineering practices.</p> <p>R507.5.1 Deck beam bearing. <u>Beams and individual beam plies of built-up beams shall be continuous between bearing locations and continuous across bearing locations supporting beam cantilevers. Beams shall be permitted to cantilever beyond bearing locations up to one fourth of the actual beam span.</u> The ends of beams shall have not less than 1½ inches (38 mm) of bearing <u>length</u> on wood or metal and not less than 3 inches (76 mm) of bearing <u>length</u> on concrete or masonry for the entire width of the beam. Where multiple-span beams bear on intermediate posts, each ply must have full bearing on the post in accordance with Figures R507.5.1(1) and R507.5.1(2).</p> <p>R507.5.2 Deck beam connection to supports. Deck beams shall be <u>connected to supporting members to prevent lateral</u> attached to supports in a manner capable of transferring vertical loads and resisting horizontal displacement. Deck beam connections to wood posts shall be in accordance with Figures <u>R507.5.2(1) and R507.5.2(2)</u> R507.5.1(1) and R507.5.1(2). Manufactured post-to-beam connectors shall be sized for the post and beam sizes. Bolts shall have washers under the head</p> <div style="text-align: center;"> </div> <p>and nut. For SI: 1 inch = 25.4 mm.</p> <p>FIGURE R507.5.1(1) R507.5.2(1) DECK BEAM TO DECK POST</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

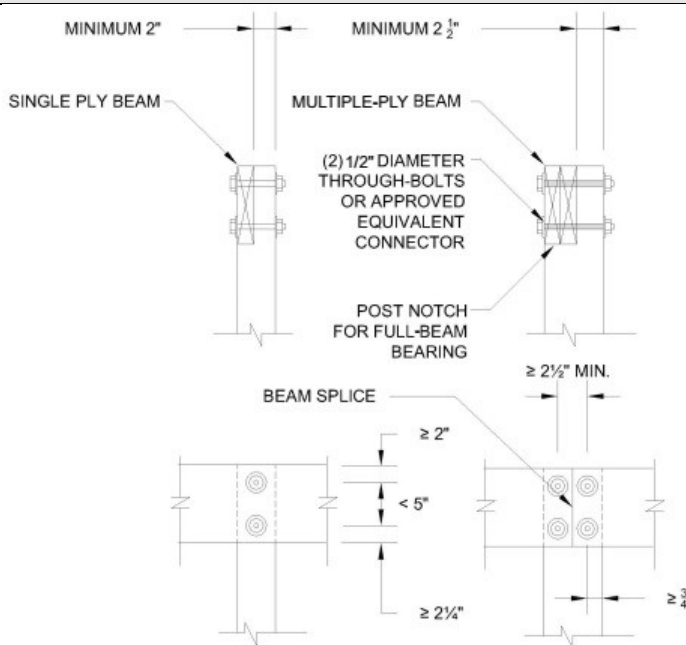
CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	 <p>For SI: 1 inch = 25.4 mm. FIGURE R507.5.1(2) R507.5.2(2) NOTCHED POST-TO-BEAM CONNECTION R507.6.1 Deck joist bearing. The ends of joists shall have not less than 1½ inches (38 mm) of bearing <u>length</u> on wood or metal and not less than 3 inches (76 mm) of bearing <u>length</u> on concrete or masonry over its entire width. Joists bearing on top of a multiple-ply beam or ledger shall be fastened in accordance with Table R602.3(1). Joists bearing on top of a single-ply beam or ledger shall be attached by a mechanical connector. Joist framing into the side of a beam or ledger board shall be supported by <i>approved</i> joist hangers.</p>					
RB185-22	<p>Revise as follows: R507.7 Decking. Maximum allowable spacing for joists supporting wood decking, excluding <i>stairways</i>, shall be in accordance with Table R507.7. Wood decking shall be attached to each supporting member with not less than two 8d <u>deformed shank threaded</u> nails or two No. 8 wood screws. Maximum allowable spacing for joists supporting <i>plastic composite</i> decking shall be in accordance with Section R507.2. Other <i>approved</i> decking or fastener systems shall be installed in accordance with the manufacturer’s installation requirements.</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

RB186-22	<p>Revise as follows: R507.7 Decking. Maximum allowable spacing for joists supporting wood decking, excluding <i>stair treads stairways</i>, shall be in accordance with Table R507.7. Wood decking shall be attached to each supporting member with not less than two 8d threaded nails or two No. 8 wood screws. Maximum allowable spacing for joists supporting <i>plastic composite</i> decking shall be in accordance with Section R507.2. Other <i>approved</i> decking or fastener systems shall be installed in accordance with the manufacturer’s installation requirements.</p>		X			Allows for prescriptive design of decking for stairway landings.
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RB187-22	<p>Revise as follows: TABLE R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS</p> <table border="1"> <thead> <tr> <th colspan="5">MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS</th> </tr> <tr> <th></th> <th>TOP EDGE</th> <th>BOTTOM EDGE</th> <th>ENDS</th> <th>ROW SPACING</th> </tr> </thead> <tbody> <tr> <td>Ledger^a</td> <td>2 inches^d</td> <td>3/4 inch</td> <td>2 inches^b</td> <td>1 3/8 inches^b</td> </tr> <tr> <td>Band Joist^c</td> <td>3/4 inch</td> <td>2 inches</td> <td>2 inches^d</td> <td>1 3/8 inches^b</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm. b. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.9.1.3(1). c. Maximum 5 inches. d. For engineered rim joists, the manufacturer’s recommendations shall govern. e. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.9.1.3(1).</p>	MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS						TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING	Ledger ^a	2 inches ^d	3/4 inch	2 inches ^b	1 3/8 inches ^b	Band Joist ^c	3/4 inch	2 inches	2 inches ^d	1 3/8 inches ^b		X			Editorial.
MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS																										
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Band Joist ^c	3/4 inch	2 inches	2 inches ^d	1 3/8 inches ^b																						

RB189-22	<p>Delete and substitute as follows:</p> <p align="center">FIGURE R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOIST</p>		X			Clarification.
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Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>FIGURE R507.9.2(1) DECK ATTACHMENT FOR LATERAL LOADS</p> <p>FIGURE R507.9.2(2) DECK ATTACHMENT FOR LATERAL LOADS</p>					
R190-22	<p>Revise as follows:</p> <p>R507.2.4 Flashing. Flashing shall be corrosion-resistant metal of nominal thickness not less than 0.019 inch (0.48 mm) or <i>approved</i> nonmetallic material that is compatible with the substrate of the structure and the decking materials. <u>Self-adhered membranes used as flashing and counterflashing shall comply with AAMA 711.</u></p> <p>Add new text as follows:</p> <p>507.9.1.5 Ledger Flashing. <u>Where ledgers are attached to wood-frame construction, flashing shall be installed above the ledger to prevent the entry of water into the wall cavity or behind the ledger. Flashing shall extend vertically a minimum of 2 inches (51 mm) above the ledger.</u></p>			X	Flashing costs range \$0.50 to \$1.00 per linear ft.	Improve deck safety.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>Flashing shall extend horizontally a minimum of 4 inches (102 mm) beyond the ledger face or shall extend to the ledger face and a minimum of ¼ inch down the ledger face.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Where a window or door opening is located less than 2 inches above the ledger, flashing shall extend to the bottom of the wall opening.</u> <u>Flashing is not required where the ledger is spaced horizontally from the exterior wall covering a minimum of 1/4 inch (6.4 mm) to allow for drainage and ventilation behind the ledger.</u> <p>R507.9.1.6 Water-resistive barrier. <u>The water-resistive barrier required by Section R703.2 shall be lapped not less than 2 inches (51 mm) over a vertical leg of the ledger flashing or counterflashing extending up the wall by not less than 2 inches (51 mm) or the height of the vertical flashing leg, whichever is less. The water-resistive barrier shall continue from the top of the ledger flashing down the wall and behind the ledger flashing and ledger.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Flashing shall be permitted to be placed against the face of the water-resistive barrier, where a self-adhering membrane counterflashing is installed a minimum of 2 inches (51 mm) over the vertical leg of the flashing and a minimum of 2 inches (51 mm) onto the water-resistive barrier.</u> <u>Flashing shall be permitted to be placed in front of the water-resistive barrier and behind the cladding exterior wall covering where ledgers are spaced horizontally from the exterior wall a minimum of 1/4 inch (6.4 mm) to allow for drainage and ventilation behind the ledger.</u> <p>R507.9.1.7 Existing walls. <u>Where ledgers are attached to existing walls without water-resistive barriers, a water-resistive barrier shall be installed behind the ledger and ledger flashing. The water-resistive barrier shall extend to the top of the ledger flashing vertical leg and a minimum of ½ inch (12.7 mm) beyond the sides and bottom of the ledger. A self-adhering membrane counterflashing shall be installed a minimum of 2 inches (51 mm) over the vertical leg of the ledger flashing and a minimum of 2 inches (51 mm) onto the existing sheathing.</u></p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Exceptions:</p> <p><u>1. Where a window or door opening is located less than 2 inches (51 mm) above the ledger, flashing shall extend to the bottom of the wall opening.</u></p> <p><u>2. Flashing is not required where the ledger is spaced horizontally from the exterior wall covering a minimum of 1/4 inch (6.4 mm) to allow for drainage and ventilation behind the ledger.</u></p> <p>R507.9.1.8 Exterior cladding wall covering. <u>Exterior cladding wall covering shall be terminated above the finished deck surface in accordance with the cladding covering manufacturer's requirements and Chapter 7, as applicable to the type of covering cladding.</u></p> <p>Exception: <u>Exterior wall coverings shall be permitted behind ledgers in accordance with Section R507.9.1.5 where capable of resisting compression forces from the ledger attachment</u></p> <p>Revise as follows:</p> <p>R703.2 Water-resistive barrier. Not fewer than one layer of <i>water-resistive barrier</i> shall be applied over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer <u>and behind deck ledgers</u>. The water-resistive barrier material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. Water-resistive barrier materials shall comply with one of the following:</p> <ol style="list-style-type: none"> 1. No. 15 felt complying with ASTM D226, Type 1. 2. ASTM E2556, Type 1 or 2. 3. ASTM E331 in accordance with Section R703.1.1. 4. Other approved materials in accordance with the manufacturer's installation instructions. <p>No.15 asphalt felt and <i>water-resistive barriers</i> complying with ASTM E2556 shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm), and where joints occur, shall be lapped not less than 6 inches (152 mm).</p> <p>R703.4 Flashing. <i>Approved corrosion-resistant flashing</i> shall be applied <i>shingle-fashion</i> in a manner to prevent entry of water into the wall cavity or penetration of water to the building</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																			
		Decrease	Neutral	Increase																																					
Sub Code:																																									
	<p>structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. Fluid-applied membranes used as flashing in exterior walls shall comply with AAMA 714. The flashing shall extend to the surface of the exterior wall finish. <u>Flashing shall be installed above deck ledgers in accordance with Section R507.9.1.5. Approved</u> corrosion-resistant flashings shall be installed at the following locations:</p> <ol style="list-style-type: none"> 1. Exterior window and door openings. Flashing at exterior window and door openings shall be installed in accordance with Section R703.4.1. 2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings. 3. Under and at the ends of masonry, wood or metal copings and sills. 4. Continuously above all projecting wood trim. 5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction. 6. At wall and roof intersections. 7. At built-in gutters. 																																								
RB192-22	<p>Revise as follows: TABLE R602.3(1) FASTENING SCHEDULE Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>ITEM</th> <th>DESCRIPTION OF BUILDING ELEMENTS</th> <th>NUMBER AND TYPE OF FASTENER^{10, 11}</th> <th colspan="2">SPACING OF FASTENERS</th> </tr> <tr> <th colspan="2"></th> <th></th> <th>Edges¹⁰ (inches)</th> <th>Intermediate supports¹¹ (inches)</th> </tr> </thead> <tbody> <tr> <td>31</td> <td>Wood structural panels, subfloor, joist and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing)</td> <td>6d common or deformed (2" x 0.113" = 0.286" head) 2" x 0.113" = 0.286" head nail (subfloor, joist)</td> <td>6</td> <td>12"</td> </tr> <tr> <td></td> <td></td> <td>6d common (2" x 0.113" = 0.286" head) nail (joist) or PSRS-01 (2" x 0.113" = 0.113") nail (joist)</td> <td>R¹</td> <td>R¹</td> </tr> <tr> <td>32</td> <td>Wood structural panels, subfloor, joist and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing)</td> <td>6d common (2" x 0.113" = 0.113") nail (subfloor, wall)</td> <td>6</td> <td>12"</td> </tr> <tr> <td></td> <td></td> <td>6d common (2" x 0.113" = 0.113") nail (joist) or PSRS-01 (2" x 0.113" = 0.113") nail (joist)</td> <td>R¹</td> <td>R¹</td> </tr> <tr> <td></td> <td></td> <td>Deformed 2" x 0.113" = 0.286" head (wall or subfloor)</td> <td>6</td> <td>12"</td> </tr> </tbody> </table>	ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{10, 11}	SPACING OF FASTENERS					Edges ¹⁰ (inches)	Intermediate supports ¹¹ (inches)	31	Wood structural panels, subfloor, joist and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing)	6d common or deformed (2" x 0.113" = 0.286" head) 2" x 0.113" = 0.286" head nail (subfloor, joist)	6	12"			6d common (2" x 0.113" = 0.286" head) nail (joist) or PSRS-01 (2" x 0.113" = 0.113") nail (joist)	R ¹	R ¹	32	Wood structural panels, subfloor, joist and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing)	6d common (2" x 0.113" = 0.113") nail (subfloor, wall)	6	12"			6d common (2" x 0.113" = 0.113") nail (joist) or PSRS-01 (2" x 0.113" = 0.113") nail (joist)	R ¹	R ¹			Deformed 2" x 0.113" = 0.286" head (wall or subfloor)	6	12"		X		Clarification.	
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31	Wood structural panels, subfloor, joist and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing)	6d common or deformed (2" x 0.113" = 0.286" head) 2" x 0.113" = 0.286" head nail (subfloor, joist)	6	12"																																					
		6d common (2" x 0.113" = 0.113") nail (joist) or PSRS-01 (2" x 0.113" = 0.113") nail (joist)	R ¹	R ¹																																					
32	Wood structural panels, subfloor, joist and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing)	6d common (2" x 0.113" = 0.113") nail (subfloor, wall)	6	12"																																					
		6d common (2" x 0.113" = 0.113") nail (joist) or PSRS-01 (2" x 0.113" = 0.113") nail (joist)	R ¹	R ¹																																					
		Deformed 2" x 0.113" = 0.286" head (wall or subfloor)	6	12"																																					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	fastening is designed in accordance with AWC NDS. Fastener spacing applies where roof framing specific gravity is 0.42 or larger. Where the specific gravity of the wood species used for Where roof framing specific gravity is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, fastening of roof sheathing shall be with RSRS-03 (2-1/2" x 0.131" x 0.281" head) nails unless alternative fastening is designed in accordance with AWC NDS. Where the specific gravity of the wood species used for roof framing is less than 0.35, fastening of the roof sheathing shall be designed in accordance with AWC NDS.					
RB194-22	<p>Revise as follows: TABLE R602.3(2) ALTERNATE ATTACHMENTS TO TABLE R602.3(1) Portions of table not shown remain unchanged.</p> <p>g. Alternate fastening is only permitted for roof sheathing where the ultimate design wind speed is less than or equal to 110 mph, and where fasteners are installed 3 inches on center at all supports, and where fastening is to wood framing of a species with specific gravity greater than or equal to 0.42 in accordance with AWC NDS.</p>		X			Clarification.
RB195-22	<p>Revise as follows: TABLE R602.3(3) REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES^a Portions of table not shown remain unchanged.</p> <p>d. Fastener spacing applies where wall framing specific gravity is 0.42 or larger where the specific gravity of the wood species used for wall framing specific gravity is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, maximum nail spacing in the field of the panel shall be 8 inches. Where the specific gravity of the wood species used for wall framing is less than 0.35, fastening of the wall sheathing shall be designed in accordance with AWC NDS.</p>			X	Cost increase for low specific gravity lumber.	Clarification.
RB197-22	<p>Revise as follows: R602.7.2 Rim board headers. Rim board header size, material and span shall be in accordance with Table R602.7(1). Rim board headers shall be constructed in accordance with Figure R602.7.2 and shall be supported at each end by full-height studs. The number of full-height studs at each end shall be not less than <u>one plus</u> the number of studs displaced by half of the header span based on the maximum stud spacing in</p>	X			Minimal.	Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

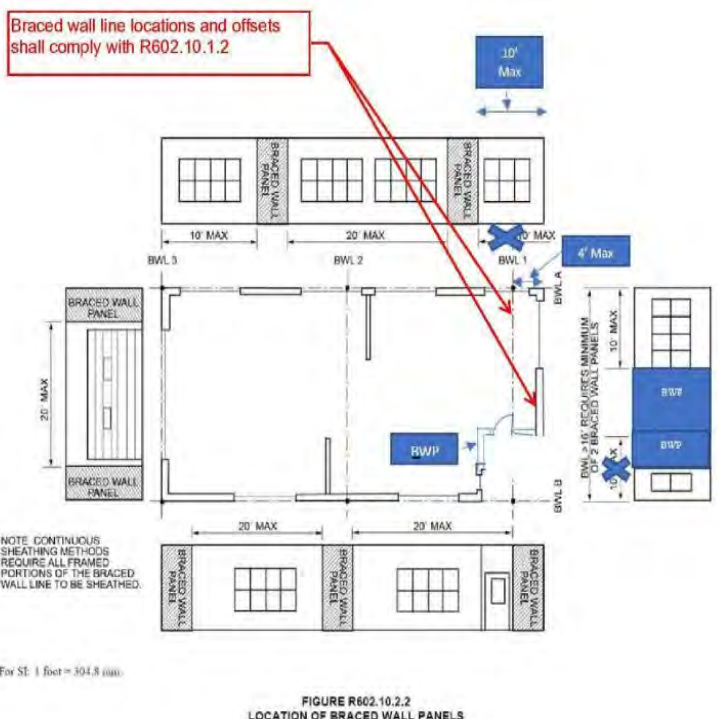
CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	accordance with Table R602.3(5). Rim board headers supporting concentrated loads shall be designed in accordance with accepted engineering practice.					
RB199-22	<p>Delete and substitute as follows:</p>  <p style="text-align: center;">FIGURE R602.10.2.2 LOCATION OF BRACED WALL PANELS</p>		X		Clarification.	
RB200-22	<p>Revise as follows:</p> <p>R602.10.2.2 Locations of braced wall panels. A <u>The nearest edge of a braced wall panel shall begin be located within 10 feet (3810 mm) from each end of a braced wall line as determined in Section R602.10.1.1.</u> The distance between adjacent edges of braced wall panels along a <i>braced wall line</i> shall be not greater than 20 feet (6096 mm) as shown in Figure R602.10.2.2.</p> <p>TABLE R602.10.5 MINIMUM LENGTH OF BRACED WALL PANELS</p> <p>Portions of table not shown remain unchanged.</p> <p>b. Use the actual length where it is greater than or equal to the minimum length. <u>The actual length of Methods CS-G, CS-WSP, CS-SFB, PFH, PFG, and CS-PF is the length of the full-height sheathed section.</u></p>		X		Clarification.	

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

R602.10.6 Construction of Methods ABW, PFH, PFG, CS-PF and BV-WSP. Methods ABW, PFH, PFG, CS-PF and BV-WSP shall be constructed as specified in Sections R602.10.6.1 through R602.10.6.5. For the purposes of determining braced wall panel spacing, the edge of Methods PFH, PFG, and CS-PF shall be defined as the end of the header.

RB201-22

Add new text as follows:
R602.10.3.1 Wall Height for Wood Framing. For determination of braced wall and panel adjustment factors in accordance with Section R602.10, wall height shall be the ~~light frame stud wall height~~ vertical distance from the lower edge of the bottom plate to the upper edge of the upper top plate determined in accordance with Figure R602.10.3.1.

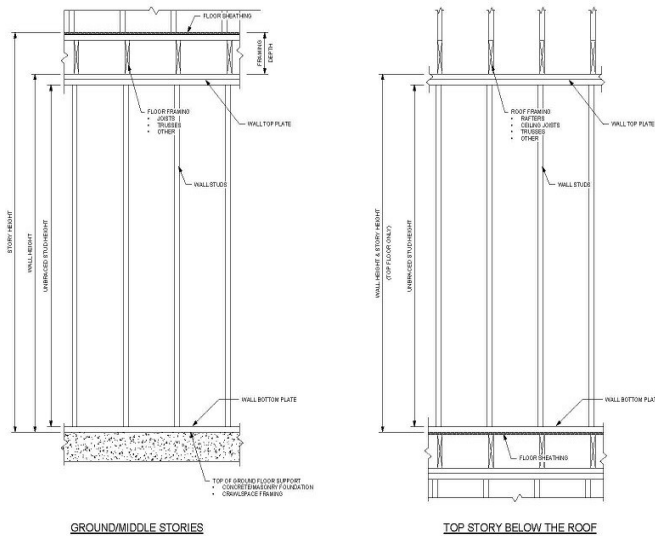


FIGURE R602.10.3.1 Wall Height for Wood Framing

Revise as follows:

TABLE R602.10.3(2) WIND ADJUSTMENT FACTORS TO THE REQUIRED LENGTH OF WALL BRACING

Portions of table not shown remain unchanged.

ITEM NUMBER	ADJUSTMENT BASED ON	STORY SUPPORTING	CONDITION	ADJUSTMENT FACTOR ^{1,2} [multiply length from Table R602.10.5(1) by this factor]	APPLICABLE METHOD
3	Wall height (Section R602.10.3.1)	Any story	8 feet	0.90	
	Story height (Section R602.10.3.1)		9 feet	0.95	
			10 feet	1.00	
			11 feet	1.05	
			12 feet	1.10	
4		Number of braced wall lines (per plan dimension)	Any story	2	1.00
	3	1.30			
	4	1.45			
	5	1.50			
	≥ 6	1.50			

X

Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
RB202-22	<p>Revise as follows:</p> <p>Extend header and horizontal bearing block to end of portal if pony wall not present Header is permitted to extend to the end of a portal with a bearing block if pony wall not present and a 1000 pound tension strap is provided For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. FIGURE R602.10.6.2 METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS</p>	X			Clarification.	
RB203-22	<p>Revise as follows:</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. Note: Header shall not extend over more than one opening. FIGURE R602.10.6.2 METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS</p>	X			Clarification	

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

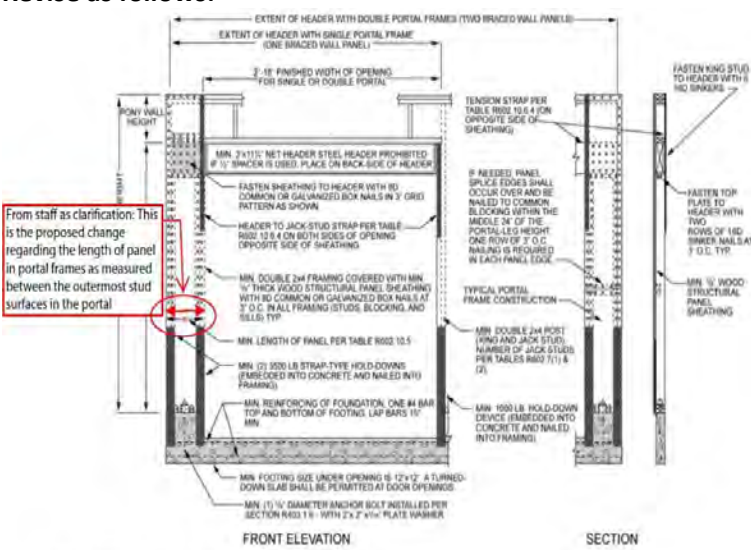
CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
RB204-22	<p>Revise as follows:</p>  <p>From staff as clarification: This is the proposed change regarding the length of panel in portal frames as measured between the outermost stud surfaces in the portal</p> <p>FIGURE R602.10.6.2 METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS</p>	X			Clarification.	
RB205-22	<p>Revise as follows:</p> <p>R606.1.1 Professional registration not required. Where the empirical design provisions of Appendix A of TMS 402, the provisions of TMS 403, or the provisions of this section are used to design masonry, project drawings, typical details and specifications are not required to be a the seal of the architect or engineer responsible for design, unless otherwise required by the state law of the <i>jurisdiction</i> having authority.</p> <p>R606.2.10 Mortar for AAC masonry. Thin-bed mortar for AAC masonry shall comply with Article 2.2 D.1 2.1 C.1 of TMS 602. Mortar used for the leveling courses of AAC masonry shall comply with Article 2.2 D.2 2.1 C.2 of TMS 602.</p> <p>R606.12.2.3.1 Connections to masonry shear walls. Connectors shall be provided to transfer forces between masonry walls and horizontal elements in accordance with the requirements of Chapter 4 Section 4.1.4 of TMS 402. Connectors shall be designed to transfer horizontal design forces acting either perpendicular or parallel to the wall, but not less than 200 pounds per linear foot (2919 N/m) of wall. The maximum spacing between connectors shall be 4 feet (1219 mm). Such</p>	X			Editorial.	

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>anchorage mechanisms shall not induce tension stresses perpendicular to grain in ledgers or nailers.</p> <p>R606.12.2.3.2 Connections to masonry columns. Connectors shall be provided to transfer forces between masonry columns and horizontal elements in accordance with the requirements of Chapter 4 Section 4.1.4 of TMS 402. Where anchor bolts are used to connect horizontal elements to the tops of columns, the bolts shall be placed within lateral ties. Lateral ties shall enclose both the vertical bars in the column and the anchor bolts. There shall be not less than two No. 4 lateral ties provided in the top 5 inches (127 mm) of the column.</p> <p>R703.12 Adhered masonry veneer installation. Adhered masonry veneer shall comply with the requirements of Section R703.7.3 and the requirements in Sections 13.1 12.1 and 13.3 12.3 of TMS 402. Adhered masonry veneer shall be installed in accordance with Section R703.7.1, Article 3.3D 3.3C of TMS 602 or the manufacturer’s instructions.</p>					
RB207-22	<p>Revise as follows:</p> <p>R609.1 General. This section prescribes performance and construction requirements for exterior windows, and doors, and <u>garage doors</u> installed in walls. Windows and doors shall be installed in accordance with the fenestration manufacturer’s written instructions. Window and door openings shall be flashed in accordance with Section R703.4. Written installation instructions shall be provided by the fenestration manufacturer for each window or door.</p> <p>R609.4 Garage doors. Garage doors shall be tested in accordance with either ASTM E330 or ANSI/DASMA 108, and shall meet the pass/fail criteria of ANSI/DASMA 108.</p> <p>Revise as follows:</p> <p>R609.4.1 Garage door labeling. Garage doors shall be <i>labeled</i> with a permanent <i>label</i> provided by the garage door manufacturer. The <i>label</i> shall identify the garage door manufacturer, the garage door model/series number, the positive and negative design wind pressure rating, the installation instruction drawing reference number, and the applicable test standard. <u>Garage doors shall be installed in accordance with the manufacturer’s installation instructions.</u></p>		X			Clarification. -

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
RB208-22	<p>Revise as follows: R702.7 Vapor retarders. Vapor retarder materials shall be classified in accordance with Table R702.7(1). A vapor retarder shall be provided on the interior side of frame walls of the class indicated in Table R702.7(2), including compliance with Table R702.7(3) or R702.7(4) where applicable. An <i>approved</i> design using accepted engineering practice for hygrothermal analysis shall be permitted as an alternative. <u>Vapor retarders shall be installed in accordance with Section R702.7.1</u> The climate zone shall be determined in accordance with Section N1101.7.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <i>Basement walls.</i> 2. Below-grade portion of any wall. 3. Construction where accumulation, condensation or freezing of moisture will not damage the materials. 4. A vapor retarder shall not be required in Climate Zones 1, 2 and 3. <p>Add new text as follows: R702.7.1 Vapor Retarder Installation. <u>Vapor retarders shall be installed in accordance with the manufacturer’s instructions accepted installation methods or an approved design. Where a vapor retarder also functions as a component of a continuous air barrier, the vapor retarder shall be installed as an air barrier in accordance with Section N1102.4.1.1.</u></p>		X			Editorial.
RB209-22	<p>Revise as follows: R702.7 Vapor retarders. Vapor retarder materials shall be classified in accordance with Table R702.7(1). A vapor retarder shall be provided on the interior side of frame walls of the class indicated in Table R702.7(2), including compliance with Table R702.7(3) or R702.7(4) where applicable. An <i>approved</i> design using accepted engineering practice for hygrothermal analysis shall be permitted as an alternative. The climate zone shall be determined in accordance with Section N1101.7.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <i>Basement walls.</i> 2. Below-grade portion of any wall. 3. Construction where accumulation, condensation or freezing of moisture will not damage the materials. 4. A vapor retarder shall not be required in Climate Zones 1, 2 and 3. 		X			Clarifications.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE														
		Decrease	Neutral	Increase																
Sub Code:																				
	<p>5. In Climate Zones 4 through 8, a vapor retarder shall not be required where the assembly complies with Table R702.7(5).</p> <p>TABLE R702.7(2) VAPOR RETARDER OPTIONS Portions of table not shown remain unchanged.</p> <p>a. <u>A responsive vapor retarder Class I and II vapor retarders with vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B) shall be allowed on the interior side of any frame wall in all climate zones.</u></p> <p>b. <u>Use of a Class I interior vapor retarder, that is not a responsive vapor retarder, in frame walls with a Class I vapor retarder on the exterior side shall require an approved design.</u></p> <p>c. <u>Where a Class I or II vapor retarder is used in combination with foam plastic insulating sheathing installed as continuous insulation on the exterior side of frame walls, the continuous insulation shall comply with Table R702.7(4) and the Class I or II vapor retarder shall be a responsive vapor retarder have a vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B).</u></p> <p>TABLE R702.7(3) CLASS III VAPOR RETARDERS Portions of table not shown remain unchanged.</p> <p>a. <u>Vented cladding shall include vinyl, polypropylene, or horizontal aluminum siding, brick veneer with a clear airspace as specified in Table R703.8.4(1), rainscreen systems, and other approved vented claddings.</u></p> <p>TABLE R702.7(4) CONTINUOUS INSULATION WITH CLASS I OR II RESPONSIVE VAPOR RETARDER Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">CLIMATE ZONE</td> <td style="width: 50%; text-align: center;">CLASS I VAPOR RETARDER/PERMITTED CONDITIONS FOR^a</td> </tr> </table> <p>Add new text as follows: R702.7(5) CONTINUOUS INSULATION ON WALLS WITHOUT A CLASS I, II, OR III INTERIOR VAPOR RETARDER^a</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">CLIMATE ZONE</th> <th style="width: 80%;">PERMITTED CONDITIONS: ^{IRC}</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">4</td> <td>Continuous insulation with R-value \geq 4.5</td> </tr> <tr> <td style="text-align: center;">5</td> <td>Continuous insulation with R-value \geq 8.5</td> </tr> <tr> <td style="text-align: center;">6</td> <td>Continuous insulation with R-value \geq 8.5</td> </tr> <tr> <td style="text-align: center;">7</td> <td>Continuous insulation with R-value \geq 11.5</td> </tr> <tr> <td style="text-align: center;">8</td> <td>Continuous insulation with R-value \geq 14</td> </tr> </tbody> </table> <p>a. <u>The total insulating value of materials to the interior side of the exterior continuous insulation, including any cavity insulation, shall not exceed R-5. Where the R-value of</u></p>	CLIMATE ZONE	CLASS I VAPOR RETARDER/PERMITTED CONDITIONS FOR ^a	CLIMATE ZONE	PERMITTED CONDITIONS: ^{IRC}	4	Continuous insulation with R-value \geq 4.5	5	Continuous insulation with R-value \geq 8.5	6	Continuous insulation with R-value \geq 8.5	7	Continuous insulation with R-value \geq 11.5	8	Continuous insulation with R-value \geq 14					
CLIMATE ZONE	CLASS I VAPOR RETARDER/PERMITTED CONDITIONS FOR ^a																			
CLIMATE ZONE	PERMITTED CONDITIONS: ^{IRC}																			
4	Continuous insulation with R-value \geq 4.5																			
5	Continuous insulation with R-value \geq 8.5																			
6	Continuous insulation with R-value \geq 8.5																			
7	Continuous insulation with R-value \geq 11.5																			
8	Continuous insulation with R-value \geq 14																			

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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Sub Code:						
	<p>materials to the interior side of the exterior <i>continuous insulation</i> exceed R-5, an <i>approved</i> design shall be required.</p> <p>b. <u>A water vapor control material layer having a permeance not greater than 1 perm in accordance with ASTM E96, Procedure A (dry cup) shall be placed on the exterior side of the wall and to the interior side of the exterior <i>continuous insulation</i>. The exterior <i>continuous insulation</i> shall be permitted to serve as the vapor control layer where, at its installed thickness or with a facer on its interior face, the exterior <i>continuous insulation</i> is a Class I or II vapor retarder.</u></p> <p>c. <u>The requirements in this table apply only to insulation used to control moisture in order to allow walls without a Class I, II, or III interior vapor retarder. The insulation materials used to satisfy this option also contribute to but do not supersede the thermal envelope requirements of the <i>International Energy Conservation Code</i>.</u></p> <p>R702.7.2 Vapor retarder installation. <u>Vapor retarders shall be installed in accordance with the manufacturer's instructions, accepted installation methods, or an approved design. Where a vapor retarder also functions as a component of a continuous air barrier, the vapor retarder shall be installed as an air barrier in accordance with the <i>International Energy Conservation Code</i> Section N1102.4.1.1.</u></p>					
RB210-42	<p>Revise as follows: TABLE R702.7(2) VAPOR RETARDER OPTIONS Portions of table not shown remain unchanged.</p> <p>c. Where a Class II vapor retarder is used in combination with foam plastic insulating sheathing <u>or insulated siding</u> installed as continuous insulation on the exterior side of frame walls, the continuous insulation shall comply with Table R702.7(4) and the Class II vapor retarder shall have a vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B).</p>		X			Adds design option.
RB212-22	<p>Revise as follows: R703.2 Water-resistive barrier. Not fewer than one layer of <i>water-resistive barrier</i> shall be applied over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer. The water-resistive barrier material shall be continuous to the top of walls and terminated at</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. <u>Where the water-resistive barrier also functions as a component of a continuous air barrier, the water-resistive barrier shall be installed as an air barrier in accordance with Section N1102.4.1.1.</u> Water-resistive barrier materials shall comply with one of the following:</p> <p>1. -----</p>					
RB213-22	<p>R703.2 Water-resistive barrier. Not fewer than one layer of <i>water-resistive barrier</i> shall be applied over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer. The water-resistive barrier material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. Water-resistive barrier materials shall comply with one of the following:</p> <ol style="list-style-type: none"> 1. No. 15 felt complying with ASTM D226, Type 1. 2. ASTM E2556, Type 1 or 2. 3. <u>Foam plastic insulating sheathing water-resistive barrier systems complying with Section R703.1.1 and installed in accordance with the manufacturer's installation instructions.</u> 4.3. ASTM E331 in accordance with Section R703.1.1. 5.4. Other approved materials in accordance with the manufacturer's installation instructions. <p>No.15 asphalt felt and <i>water-resistive barriers</i> complying with ASTM E2556 shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm), and where joints occur, shall be lapped not less than 6 inches (152 mm).</p>		X			Adds design option.
RB214-22	<p>Revise as follows:</p> <p>R703.2 Water-resistive barrier. Not fewer than one layer of <i>water-resistive barrier</i> shall be applied over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer. The water-resistive barrier material shall be continuous to the top of walls and terminated at penetrations and building appendages</p>	X			Reduced cost for accessory structures.	Clarification.

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Sub Code:																																																									
	<p>in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. Water-resistive barrier materials shall comply with one of the following:</p> <ol style="list-style-type: none"> No. 15 felt complying with ASTM D226, Type 1. ASTM E2556, Type 1 or 2. ASTM E331 in accordance with Section R703.1.1. Other approved materials in accordance with the manufacturer's installation instructions. <p>No.15 asphalt felt and <i>water-resistive barriers</i> complying with ASTM E2556 shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm), and where joints occur, shall be lapped not less than 6 inches (152 mm).</p> <p>Exception: A water-resistive barrier shall not be required in unconditioned detached tool sheds, storage sheds, playhouses, and other similar accessory structures provided all of the following requirements are met:</p> <ol style="list-style-type: none"> Exterior wall covering is limited to siding that is attached direct to studs. Exterior walls are uninsulated. Interior side of exterior walls has no wall covering or wall finishes. 																																																								
RB215-22	<p>Revise as follows: TABLE R703.3(1) SIDING MINIMUM ATTACHMENT AND MINIMUM THICKNESS Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th rowspan="2">SIDING MATERIAL</th> <th rowspan="2">NOMINAL THICKNESS (inches)</th> <th rowspan="2">JOINT TREATMENT</th> <th colspan="6">TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS</th> </tr> <tr> <th>Wood or wood structural panel sheathing into stud</th> <th>Fiberboard sheathing into stud</th> <th>Gypsum sheathing into stud</th> <th>Four plastic sheathing into stud</th> <th>Direct to studs</th> <th>Number or spacing of fasteners</th> </tr> </thead> <tbody> <tr> <td>Fiber Panel siding (see Section R703.10.1)</td> <td>7/16</td> <td>Section R703.10.1</td> <td>6d common (2" x 0.113")</td> <td>6d common (2" x 0.113")</td> <td>6d common (2" x 0.113")</td> <td>6d common (2" x 0.113")</td> <td>4d common (1 1/2" x 0.099")</td> <td>6" panel edges 12" inter. sup.</td> </tr> <tr> <td>Lap siding (see Section R703.10.2)</td> <td>7/16</td> <td>Section R703.10.2</td> <td>6d common (2" x 0.113")</td> <td>6d common (2" x 0.113")</td> <td>6d common (2" x 0.113")</td> <td>6d common (2" x 0.113")</td> <td>6d common (2" x 0.113") or Δ 120" (11 gauge) roofing nail</td> <td>Note 1</td> </tr> <tr> <td>Insulated vinyl siding¹</td> <td>0.035 (vinyl siding layer only)</td> <td>Lap</td> <td>0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown¹</td> <td>0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown¹</td> <td>0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown¹</td> <td>0.120" nail (shank) with a 0.313" head Section R703.11.2</td> <td>Not allowed</td> <td>16 inches on center or specified by manufacturer instructions, test report or other sections of this code</td> </tr> <tr> <td>Vinyl siding² (see Section R703.11)</td> <td>0.035</td> <td>Lap</td> <td>0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown¹</td> <td>0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown¹</td> <td>0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown¹</td> <td>0.120" nail (shank) with a 0.313" head Section R703.11.2</td> <td>Not allowed</td> <td>16 inches on center or as specified by the manufacturer instructions or test report</td> </tr> </tbody> </table>	SIDING MATERIAL	NOMINAL THICKNESS (inches)	JOINT TREATMENT	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS						Wood or wood structural panel sheathing into stud	Fiberboard sheathing into stud	Gypsum sheathing into stud	Four plastic sheathing into stud	Direct to studs	Number or spacing of fasteners	Fiber Panel siding (see Section R703.10.1)	7/16	Section R703.10.1	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	4d common (1 1/2" x 0.099")	6" panel edges 12" inter. sup.	Lap siding (see Section R703.10.2)	7/16	Section R703.10.2	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113") or Δ 120" (11 gauge) roofing nail	Note 1	Insulated vinyl siding ¹	0.035 (vinyl siding layer only)	Lap	0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown ¹	0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown ¹	0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown ¹	0.120" nail (shank) with a 0.313" head Section R703.11.2	Not allowed	16 inches on center or specified by manufacturer instructions, test report or other sections of this code	Vinyl siding ² (see Section R703.11)	0.035	Lap	0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown ¹	0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown ¹	0.120" nail (shank) with a 0.313" head or 16-gage staple with 7/16" to 1/2" inch crown ¹	0.120" nail (shank) with a 0.313" head Section R703.11.2	Not allowed	16 inches on center or as specified by the manufacturer instructions or test report		X			Clarification.
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RB216-22	<p>Add new text as follows: R703.3.1 Siding clearance at wall and adjacent surfaces. Unless otherwise specified by the cladding manufacturer or this code, polypropylene, insulated vinyl, and vinyl claddings shall have clearance of at least 6 inches (152 mm) from grade the ground and at least 1/2 inch (13 mm) from other adjacent surfaces (decks, roofs, slabs).</p>		X			Clarification.																																																			
RB217-22	<p>Revise as follows: R703.3.4 Minimum fastener length and penetration. Fasteners shall have the greater of the minimum length specified in Table</p>		X			Editorial.																																																			

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R703.3(1) or as required to provide a minimum penetration into framing as follows:</p> <ol style="list-style-type: none"> 1. Fasteners for horizontal aluminum siding, steel siding, particleboard panel siding, wood structural panel siding in accordance with ANSI/APA-PRP 210, fiber-cement panel siding and fiber-cement lap siding installed over foam plastic sheathing shall penetrate not less than 1½ inches (38 mm) into framing or shall be in accordance with the manufacturer’s installation instructions. 2. Fasteners for hardboard panel and lap siding shall penetrate not less than 1½ inches (38 mm) into framing. 3. Fasteners for vinyl siding and insulated vinyl siding shall be installed in accordance with Section R703.11 or R703.13. over wood or wood structural panel sheathing shall penetrate not less than 1¾ inches (32 mm) into sheathing and framing combined. Vinyl siding and insulated vinyl siding shall be permitted to be installed with fasteners penetrating into or through wood or wood structural sheathing of minimum thickness as specified by the manufacturer’s instructions or test report, with or without penetration into the framing. Where the fastener penetrates fully through the sheathing, the end of the fastener shall extend not less than ¾ inch (6.4 mm) beyond the opposite face of the sheathing. Fasteners for vinyl siding and insulated vinyl siding installed over foam plastic sheathing shall be in accordance with Section R703.11.2. Fasteners for vinyl siding and insulated vinyl siding installed over fiberboard or gypsum sheathing shall penetrate not less than 1¾ inches (32 mm) into framing. 4. <u>Fasteners for polypropylene siding shall be installed in accordance with Section R703.14.</u> 5. Fasteners for vertical or horizontal wood siding shall penetrate not less than 1½ inches (38 mm) into studs, studs and wood sheathing combined, or blocking. 6. Fasteners for siding material installed over foam plastic sheathing shall have sufficient length to accommodate foam plastic sheathing thickness and to penetrate framing or sheathing and framing combined, as specified in Items 1 through 4. 					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
RB218-22	<p>Revise as follows:</p> <p>R703.4 Flashing. <i>Approved</i> corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. <u>Overlapped flashing shall be applied in shingle-fashion.</u> Self- adhered membranes used as flashing shall comply with AAMA 711. Fluid-applied membranes used as flashing in exterior walls shall comply with AAMA 714. The flashing shall extend to the surface of the exterior wall finish. <i>Approved</i> corrosion-resistant flashings shall be installed at the following locations:</p> <p>1.</p>		X			Adds design options.
RB219-22	<p>Revise as follows:</p> <p>R703.4.1 Flashing installation at exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to a <i>water-resistive barrier</i> complying with Section 703.2 for subsequent drainage. Air sealing shall be installed around all window and door openings on the interior side of the rough opening gap. Mechanically attached flexible flashings shall comply with AAMA 712. Flashing at exterior window and door openings shall be installed in accordance with one or more of the following:</p> <ol style="list-style-type: none"> 1. The fenestration manufacturer’s installation and flashing instructions, or for applications not addressed in the fenestration manufacturer’s instructions, in accordance with the flashing <u>or water-resistive barrier</u> manufacturer’s instructions. Where flashing instructions or details are not provided, <i>pan flashing</i> shall be installed at the sill of exterior window and door openings. <i>Pan flashing</i> shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage. Openings using <i>pan flashing</i> shall incorporate flashing or protection at the head and sides. 2. In accordance with the flashing design or method of a <i>registered design professional</i>. 3. In accordance with other <i>approved</i> methods. 		X			Adds design option.
RB220-22	<p>Revise as follows:</p> <p>R703.6.1 Application. Wood shakes or shingles shall be applied either single course or double course over nominal 1/2-inch (12.7 mm) wood-based sheathing or to furring strips over 1/2-inch</p>		X			Editorial

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>(12.7 mm) nominal non-wood sheathing. A <i>water-resistive barrier</i> shall be provided over all sheathing, with horizontal overlaps in the membrane of not less than 2 inches (51 mm) and vertical overlaps of not less than 6 inches (152 mm). Where horizontal furring strips are used, they shall be 1 inch by 3 inches or 1 inch by 4 inches (25 mm by 76 mm or 25 mm by 102 mm) and shall be fastened to the studs with minimum 7d or 8d box nails and shall be spaced a distance on center equal to the actual weather exposure of the shakes or shingles, not to exceed the maximum exposure specified in Table R703.6.1. When installing shakes or shingles over a nonpermeable <i>water-resistive barrier</i>, furring strips shall be placed first vertically over the barrier and in addition, horizontal furring strips shall be fastened to the vertical furring strips prior to attaching the shakes or shingles to the horizontal furring strips. <u>Where installed over foam plastic insulating sheathing, furring attachments shall comply with Sections R703.15, R703.16, or R703.17.</u> The spacing between adjacent shingles to allow for expansion shall be 1/8 inch (3.2 mm) to 1/4 inch (6.4 mm) apart, and between adjacent shakes shall be 3/8 inch (9.5 mm) to 1/2 inch (12.7 mm) apart. The offset spacing between joints in adjacent courses shall be not less than 1 1/2 inches (38 mm).</p>					
RB221-22	<p>Revise as follows: R703.6.1 Application. Wood shakes or shingles shall be applied either single course or double course over nominal 1/2-inch (12.7 mm) wood-based sheathing or to furring strips over 1/2-inch (12.7 mm) nominal non-wood sheathing. A <i>water-resistive barrier</i> shall be provided <u>in accordance with Section R703.2</u> over all sheathing, with horizontal overlaps in the membrane of not less than 2 inches (51 mm) and vertical overlaps of not less than 6 inches (152 mm). Where horizontal furring strips are used, they shall be 1 inch by 3 inches or 1 inch by 4 inches (25 mm by 76 mm or 25 mm by 102 mm) and shall be fastened to the studs with minimum 7d or 8d box nails and shall be spaced a distance on center equal to the actual weather exposure of the shakes or shingles, not to exceed the maximum exposure specified in Table R703.6.1. When installing shakes or shingles over a nonpermeable <i>water-resistive barrier</i>, furring strips shall be placed first vertically over the <u><i>water-resistive barrier</i></u> and in addition, horizontal furring strips shall be fastened to the</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	vertical furring strips prior to attaching the shakes or shingles to the horizontal furring strips. The spacing between adjacent shingles to allow for expansion shall be 1/8 inch (3.2 mm) to 1/4 inch (6.4 mm) apart, and between adjacent shakes shall be 3/8 inch (9.5 mm) to 1/2 inch (12.7 mm) apart. The offset spacing between joints in adjacent courses shall be not less than 1 1/2 inches (38 mm).					
RB222-22	<p>Revise as follows:</p> <p>R703.6.1 Application. Wood shakes or shingles shall be applied either single course or double course over nominal 1/2-inch (12.7 mm) wood-based sheathing or to furring strips over 1/2-inch (12.7 mm) nominal non-wood sheathing. A <i>water-resistive barrier</i> shall be provided over all sheathing, with horizontal overlaps in the membrane of not less than 2 inches (51 mm) and vertical overlaps of not less than 6 inches (152 mm). Where horizontal furring strips are used, they shall be 1 inch by 3 inches or 1 inch by 4 inches (25 mm by 76 mm or 25 mm by 102 mm) and shall be fastened to the studs with minimum 7d or 8d box nails and shall be spaced a distance on center equal to the actual weather exposure of the shakes or shingles, not to exceed the maximum exposure specified in Table R703.6.1. When installing shakes or shingles over a nonpermeable <i>water-resistive barrier</i>, furring strips shall be placed first vertically over the barrier and in addition, horizontal furring strips shall be fastened to the vertical furring strips prior to attaching the shakes or shingles to the horizontal furring strips. <u>Alternatively, horizontal furring shall be gapped a minimum of 3/16-inch from the surface of the <i>water-resistive barrier</i> without the requirement for a vertical furring strip.</u> The spacing between adjacent shingles to allow for expansion shall be 1/8 inch (3.2 mm) to 1/4 inch (6.4 mm) apart, and between adjacent shakes shall be 3/8 inch (9.5 mm) to 1/2 inch (12.7 mm) apart. The offset spacing between joints in adjacent courses shall be not less than 1 1/2 inches (38 mm).</p>	X			Provides less costly alternative horizontal furring installation that provides a gap for drainage and ventilation for vertical furring installed over a nonpermeable water-resistive barrier.	Adds design option.
RB223-22	<p>Revise as follows:</p> <p>R703.6.3 Attachment. Wood shakes or shingles shall be installed according to this chapter and the manufacturer's instructions. Each shake or shingle shall be held in place by two stainless steel Type 304, Type 316 or hot-dipped zinc-coated galvanized corrosion-resistant box nails in accordance with Table R703.6.3(1) or R703.6.3(2). The hot-dipped zinc-coated</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	galvanizing shall be in compliance with ASTM A153 <u>Class D</u> or <u>ASTM A641 Class 3S</u> , 1.0 ounce per square foot . Alternatively, 16-gage stainless steel Type 304 or Type 316 staples with crown widths $\frac{7}{16}$ inch (11 mm) minimum, $\frac{3}{4}$ inch (19 mm) maximum, shall be used and the crown of the staple shall be placed parallel with the butt of the shake or the shingle. In single-course application, the fasteners shall be concealed by the course above and shall be driven approximately 1 inch (25 mm) above the butt line of the succeeding course and $\frac{3}{4}$ inch (19 mm) from the edge. In double-course applications, the exposed shake or shingle shall be face-nailed with two fasteners, driven approximately 2 inches (51 mm) above the butt line and $\frac{3}{4}$ inch (19 mm) from each edge. Fasteners installed within 15 miles (24 km) of saltwater coastal areas shall be stainless steel Type 316. Fasteners for fire-retardant-treated shakes or shingles in accordance with Section R902 or pressure-impregnated-preservative- treated shakes or shingles in accordance with AWPA U1 shall be stainless steel Type 316. The fasteners shall penetrate the sheathing or furring strips by not less than $\frac{1}{2}$ inch (13 mm) and shall not be overdriven. Fasteners for untreated (natural) and treated products shall comply with ASTM F1667.					
RB224-22	<p>Revise as follows:</p> <p>R703.7.1 Lath. Lath and lath attachments shall be of corrosion-resistant materials in accordance with ASTM C1063. Expanded metal, welded wire, or woven wire lath shall be attached to wood framing members or furring. Where the exterior plaster is serving as wall bracing in accordance with Table R602.10.4, the lath shall be attached directly to framing. The lath shall be attached with $1\frac{1}{2}$-inch-long (38 mm), <u>0.120 inch (3 mm) diameter (11-gage) nails having a $\frac{7}{16}$-inch (11.1 mm) head, or $\frac{7}{8}$-inch-long (22.2 mm), 16-gage staples, spaced not more than 7 inches (178 mm) on center along framing members or furring and not more than 24 inches (610 mm) on center between framing members or furring, or as otherwise <i>approved</i>. Additional fastening between wood framing members shall not be prohibited. Lath attachments to cold-formed steel framing or to masonry, stone, or concrete substrates shall be in accordance with ASTM C1063. Where lath is installed directly over foam sheathing, lath connections shall also be in accordance with Section R703.15,</u></p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

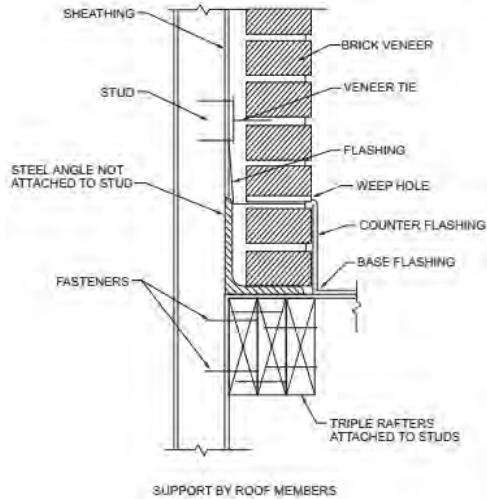
CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R703.16 or R703.17. Where lath is attached to furring installed over foam sheathing, the furring connections shall be in accordance with Section R703.15, R703.16 or R703.17.</p> <p>Exception: Lath is not required over masonry, cast-in-place concrete, <i>precast concrete</i> or stone substrates prepared in accordance with ASTM C1063.</p>					
RB226-22	<p>Revise as follows:</p> <p>R703.8.2.2 Support by ledger or roof construction. A steel angle shall be placed directly on top of the <u>ledger or roof construction</u>. The <u>ledger or roof supporting construction</u> for <u>supporting</u> the steel angle shall consist of not fewer than three 2-inch by 6-inch (51 mm by 152 mm) wood members for wood construction or three 550S162 cold-formed steel members for cold-formed steel light frame construction.–A The wood member abutting the vertical wall stud construction shall be anchored with not fewer than three⁵/₈-inch (15.9 mm) diameter by 5-inch (127 mm) lag screws to every wood stud spacing. Each additional wood roof member shall be anchored by the use of two 10d nails at every wood stud spacing. A cold-formed steel member abutting the vertical wall stud shall be anchored with not fewer than nine No. 8 screws to every cold-formed steel stud. Each additional cold-formed steel roof member shall be anchored to the adjoining roof member using two No. 8 screws at every stud spacing. Not less than two-thirds the width of the masonry veneer thickness shall bear on the steel angle. Flashing and weep holes shall be located in the masonry veneer wythe in accordance with Figure R703.8.2.2(1) or Figure R703.8.2.2(2). The maximum height of the masonry veneer above the steel angle support shall be 12 feet 8 inches (3861 mm). The airspace separating the masonry veneer from the wood backing shall be in accordance with Sections R703.8.4 and R703.8.4.2. The support for the masonry veneer shall be constructed in accordance with Figure R703.8.2.2(1) or Figure R703.8.2.2(2).</p> <p>The maximum slope of the a steel angle installed roof construction without stops shall be 7:12. A steel angle installed Roof construction with a slopes greater than 7:12 but not more than 12:12 shall have stops of a minimum 3-inch by 3-inch by¹/₄-inch (76 mm by 76 mm by 6.4 mm) steel plate welded to the angle at 24 inches (610 mm) on center along the angle or as <i>approved by the building official</i>.</p>	X			Decrease cost by simplifying the laying of the masonry veneer by allowing one continuous piece of flashing to be installed instead of multiple pieces of step flashing, which allows construction of masonry veneer to proceed at a quicker pace resulting in a reduction of labor cost.	Adds design option.

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		Decrease	Neutral	Increase		

Sub Code:

FIGURE R703.8.2.2(1) EXTERIOR MASONRY VENEER SUPPORT BY ROOF MEMBERS



Add new text as follows:

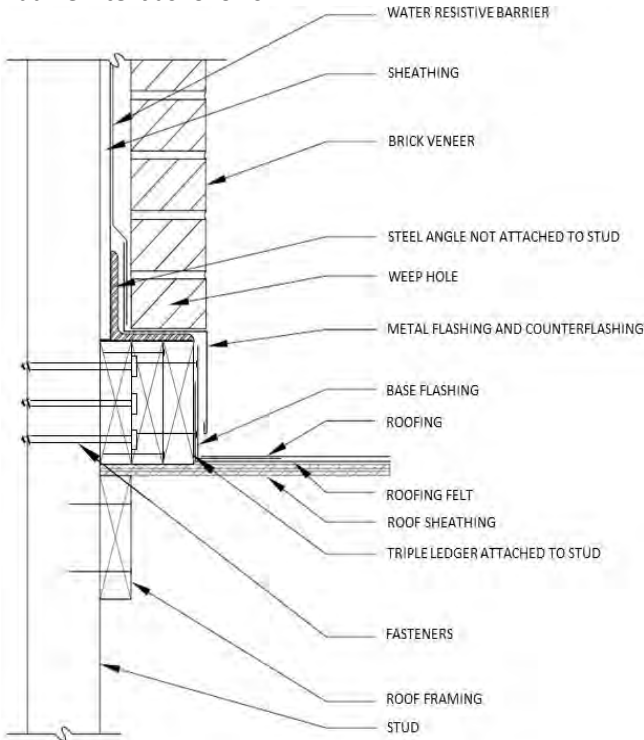


FIGURE R703.8.2.2(2) EXTERIOR MASONRY VENEER SUPPORT BY LEDGER

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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Sub Code:																					
RB227-22	<p>Revise as follows:</p> <p>TABLE R703.8.3.1 ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER^{a, b, c, d}</p> <p>Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>SIZE OF STEEL ANGLE^{a, c, d} (Inches)</th> <th>NO STORY ABOVE</th> <th>ONE STORY ABOVE</th> <th>TWO STORIES ABOVE</th> <th>NO. OF 1/2-INCH OR EQUIVALENT REINFORCING BARS IN REINFORCED LINTEL^{b, d}</th> </tr> </thead> <tbody> <tr> <td>5 x 3 x 5/16 or 5 x 3 1/2 x 5/16</td> <td>10'-0"</td> <td>8'-0"</td> <td>6'-0"</td> <td>2</td> </tr> <tr> <td>6 x 3 1/2 x 5/16 or 6 x 5 x 5/16 with 2-#4 course wires between first and second course</td> <td>14'-0"</td> <td>9'-6"</td> <td>7'-0"</td> <td>2</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm</p> <p>d. Use either Either steel angle or reinforced lintel shall to span opening.</p>	SIZE OF STEEL ANGLE ^{a, c, d} (Inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF 1/2-INCH OR EQUIVALENT REINFORCING BARS IN REINFORCED LINTEL ^{b, d}	5 x 3 x 5/16 or 5 x 3 1/2 x 5/16	10'-0"	8'-0"	6'-0"	2	6 x 3 1/2 x 5/16 or 6 x 5 x 5/16 with 2-#4 course wires between first and second course	14'-0"	9'-6"	7'-0"	2	X			Minimal for queen- or king-size brick.	Clarification.
SIZE OF STEEL ANGLE ^{a, c, d} (Inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF 1/2-INCH OR EQUIVALENT REINFORCING BARS IN REINFORCED LINTEL ^{b, d}																	
5 x 3 x 5/16 or 5 x 3 1/2 x 5/16	10'-0"	8'-0"	6'-0"	2																	
6 x 3 1/2 x 5/16 or 6 x 5 x 5/16 with 2-#4 course wires between first and second course	14'-0"	9'-6"	7'-0"	2																	
RB228-22	<p>Revise as follows:</p> <p>R703.11 Vinyl siding. Vinyl siding shall be certified and <i>labeled</i> as conforming to the requirements of ASTM D3679 by an approved quality control agency.</p> <p>R703.13 Insulated vinyl siding. <i>Insulated vinyl siding</i> shall be certified and <i>labeled</i> as conforming to the requirements of ASTM D7793 by an approved quality control agency.</p> <p>R703.14 Polypropylene siding. <i>Polypropylene siding</i> shall be certified and <i>labeled</i> as conforming to the requirements of ASTM D7254, and those of Section R703.14.2 or Section R703.14.3, by an approved quality control agency.</p> <p>R902.2 Fire-retardant-treated shingles and shakes. Fire-retardant-treated wood shakes and shingles shall be treated by impregnation with chemicals by the full-cell vacuum-pressure process, in accordance with AWWA C1. Each bundle shall be marked to identify the manufactured unit and the manufacturer, and shall be <i>labeled</i> to identify the classification of the material in accordance with the testing required in Section R902.1, the treating company and the quality control <u>approved</u> agency.</p>		X			Editorial.															
RB229-22	<p>Revise as follows:</p> <p>R703.11.1 Installation. Vinyl siding, soffit <u>insulated vinyl siding</u>, and accessories shall be installed in accordance with the <u>manufacturer's installation instructions</u>.</p>		X			Editorial.															

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R703.11.1.1 Fasteners. Unless specified otherwise by the manufacturer’s instructions, fasteners for vinyl siding shall be 0.120-inch (3 mm) shank diameter nail with a 0.313-inch (8 mm) head or 16-gage staple with a 3/8-inch (9.5 mm) to 1/2-inch (12.7 mm) crown <u>or in accordance with Table R703.3(1).</u></p> <p>R703.11.1.2 Penetration depth. Unless specified otherwise by the manufacturer’s instructions <u>or in accordance with Table R703.3(1),</u> fasteners shall penetrate into building framing. The total penetration into sheathing, furring, framing or other <i>nailable substrate</i> shall be a minimum 1 1/4 inches (32 mm). Where specified by the manufacturer’s instructions and supported by a test report, fasteners are permitted to penetrate into or fully through nailable sheathing or other nailable substrate of minimum thickness specified by the instructions or test report without penetrating into framing. Where the fastener penetrates fully through the sheathing, the end of the fastener shall extend a minimum of 1/4 inch (6.4 mm) beyond the opposite face of the sheathing or nailable substrate.</p> <p>R703.11.1.3 Spacing. Unless specified otherwise by the manufacturer’s instructions, the maximum spacing between fasteners for horizontal siding shall be 16 inches (406 mm), and for vertical siding 12 inches (305 mm) both horizontally and vertically. Where specified by the manufacturer’s instructions and supported by a test report, <u>24 inches (610 mm) greater</u> fastener spacing is permitted.</p>					
RB230-22	<p>Revise as follows:</p> <p>R703.11.1 Installation. Vinyl siding, soffit <u>insulated vinyl siding,</u> and <u>compatible</u> accessories shall be installed in accordance with the <i>manufacturer’s installation instructions.</i></p> <p>Add new text as follows:</p> <p>R703.11.1.1 Starter Strip. <u>The first course of horizontal siding shall be secured using a starter strip as specified in the manufacturer’s installation instructions. See Figure R703.1.1 (1). Where the first course of siding has to be cut or trimmed, the bottom edge shall be secured with utility trim and snap locks as specified by the manufacturer’s installation instructions.</u></p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

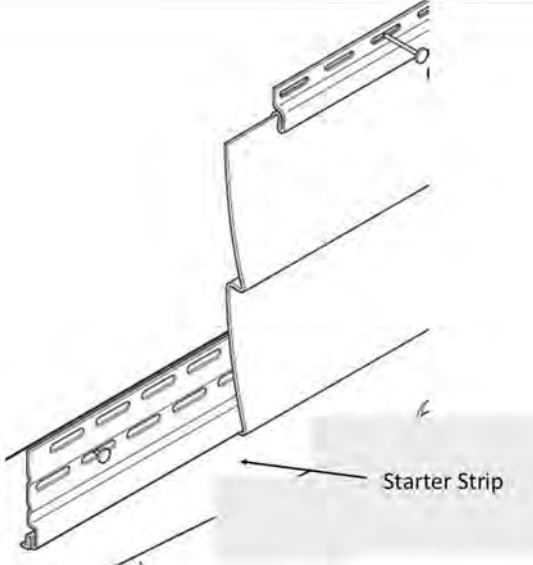
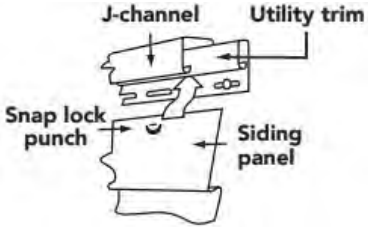
CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	 <p>a. <u>Figure R703.11.1.1(1) illustrates typical installation details. See manufacturer's installation instructions for actual installation details.</u> Figure R703.11.1.1 (1) Typical Starter Strip^a R703.11.1.2 Utility Trim. <u>Where horizontal siding has to be cut or trimmed below windows and at the top of walls, the top edge of the siding shall be secured with utility trim and snap locks or as specified by the manufacturer's installation instructions. See Figures R703.11.1.2 (1) and R703.11.1.2 (2).</u></p>  <p><u>Figure R703.11.2.(1) illustrates typical installation details. See manufacturer's installation instructions for actual installation details.</u></p>				-	

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

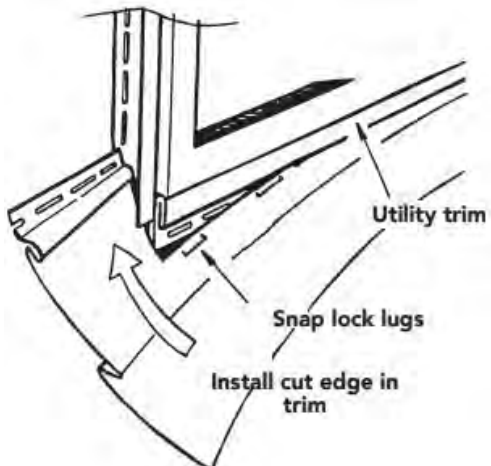
CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>Figure R703.11.1.2 (1) Typical Snap Lock & Utility Trim^a</u></p>  <p>a. <u>Figure R703.11.1.2(2) illustrates typical installation details. See manufacturer's installation instructions for actual installation details</u></p> <p><u>Figure R703.11.1.2 (2) Typical Snap Lock & Utility Trim Under Window^a</u></p> <p><u>Revise as follows:</u> <u>R703.13.1 Insulated vinyl siding and accessories.</u> <i>Insulated vinyl siding</i> and compatible accessories shall be installed in accordance with <u>Sections R703.11.1, R703.11.2, and the manufacturer's installation instructions.</u></p>					-
RB232-22	<p><u>Revise as follows:</u> <u>R703.14.1.1 Installation.</u> <u>Unless otherwise specified in the manufacturer's installation instructions, polypropylene siding shall be installed over and attached to wood structural panel sheathing with minimum thickness of 7/16 inch (11.1 mm), or other nailable substrate, composed of wood or wood-based material and fasteners having equivalent withdrawal resistance. Accessories shall be installed in accordance with the manufacturer's installation instructions.</u></p> <p><u>Add new text as follows:</u> <u>R703.14.1.1.1 Starter Strip.</u> <u>Horizontal siding shall be installed with a starter strip at the initial course at any location.</u></p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

R703.14.1.1.2 Under Windows and Top of Walls. Where nail hem is removed such as under windows and at top of walls, nail slot punch or predrilled holes shall be constructed as shown in Figure R703.14.1.1.2 (1).

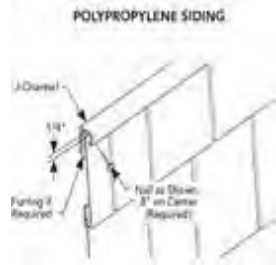


Figure R703.14.1.1.2 (1) Typical Trim Under Window and Top of Walls Polypropylene Siding

Revise as follows:

R703.14.1.2 Fastener requirements. Unless otherwise specified in the approved *manufacturer's installation instructions*, nails shall be corrosion resistant, with a minimum 0.120-inch (3 mm) shank and minimum 0.313-inch (8 mm) head diameter. Nails shall be a minimum of 1¹/₄ inches (32 mm) long or as necessary to penetrate sheathing or *nailable substrate* not less than ³/₄ inch (19.1 mm). Where the nail fully penetrates the sheathing or *nailable substrate*, the end of the fastener shall extend not less than ¹/₄ inch (6.4 mm) beyond the opposite face of the sheathing or *nailable substrate*. Staples are not permitted. Spacing of fasteners shall be installed in accordance with the *manufacturer's installation instructions*.

RB233-22

Revise as follows:

TABLE R703.15.1 CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a

Portions of table not shown remain unchanged.

CLADDING FASTENER MINIMUM PENETRATION INTO WOOD WALL OR MINIMUM PENETRATION INTO FOAM SHEATHING ^b	CLADDING FASTENER TYPE AND MINIMUM SIZE ^c	CLADDING FASTENER VERTICAL SPACING ^d (inches)	MAXIMUM THICKNESS OF FOAM SHEATHING ^e (inches)															
			16" O.C. Fastener Horizontal Spacing								24" O.C. Fastener Horizontal Spacing							
			11"		15"		18"		25"		3"		11"		15"		25"	
Wood cladding, minimum 1/4-inch penetration	0.119" diameter nail	6	2:00	1:45	1:00	0:75	DR	2:00	0:50	0:55	DR	DR	DR	DR	DR	DR	DR	
		9	2:00	1:00	0:65	DR	DR	2:00	0:55	DR	DR	DR	DR	DR	DR	DR	DR	
		12	2:00	0:55	DR	DR	DR	1:55	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR
		6	3:00	1:50	1:15	0:80	DR	DR	3:00	1:05	0:65	DR	DR	DR	DR	DR	DR	DR
		9	3:00	1:20	0:80	0:60	DR	DR	3:00	0:70	DR	DR	DR	DR	DR	DR	DR	DR
		12	3:00	0:70	DR	DR	DR	2:15	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR
	0.137" diameter nail	6	4:00	2:15	1:50	1:20	0:75	4:00	1:30	0:90	0:70	DR	DR	DR	DR	DR	DR	DR
		9	4:00	1:55	1:05	0:80	DR	4:00	0:90	0:55	DR	DR	DR	DR	DR	DR	DR	DR
		12	4:00	0:90	0:55	DR	DR	3:75	0:50	DR	DR	DR	DR	DR	DR	DR	DR	DR
		6	4:00	3:55	2:50	2:05	1:40	4:00	2:25	1:55	1:25	0:80	DR	DR	DR	DR	DR	DR
		9	4:00	2:55	1:80	1:45	0:65	4:00	1:60	1:10	0:65	0:50	DR	DR	DR	DR	DR	DR
		12	4:00	1:60	0:10	0:55	0:50	4:00	0:65	0:60	DR	DR	DR	DR	DR	DR	DR	DR

X

Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																											
		Decrease	Neutral	Increase																																																													
Sub Code:																																																																	
	<p>d. <u>Fastener vertical spacing is an average spacing associated with the following nail count per foot: 6 inch spacing is associated with 2 nails per foot, 8 inch spacing is associated with 1.5 nails per foot, and 12 inch spacing is associated with 1 nail per foot.</u></p> <p>d-e. <u>Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C578 or ASTM C1289.</u></p> <p>f. <u>Cladding weight is the maximum weight of cladding materials in pounds per square foot of wall area. The 3 psf category typically applies to panel and lap siding materials; the 11 psf category typically applies to conventional 3-coat stucco of not more than 7/8- inch thickness; and 15 psf to 25 psf categories typically apply to adhered masonry veneers.</u></p> <p>TABLE R703.15.2 FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b}</p> <p>Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="3">FURRING MATERIAL</th> <th rowspan="3">FURRING MEMBER</th> <th rowspan="3">FASTENER TYPE AND MINIMUM SIZE</th> <th rowspan="3">MINIMUM PENETRATION INTO WALL FURRING (INches)^c</th> <th rowspan="3">FASTENER SPACING IN FURRING (INches)</th> <th colspan="8">MAXIMUM THICKNESS OF FOAM SHEATHING^d (INches)</th> </tr> <tr> <th colspan="4">16" O.C. Furring^e</th> <th colspan="4">24" O.C. Furring^e</th> </tr> <tr> <th colspan="2">Siding (Fasten)^f</th> <th colspan="2">Siding (Sheat)^f</th> <th colspan="2">Siding (Fasten)^f</th> <th colspan="2">Siding (Sheat)^f</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>11</td> <td>15</td> <td>15</td> <td>25</td> <td>3</td> <td>11</td> <td>15</td> <td>15</td> <td>25</td> <td>3</td> <td>11</td> <td>15</td> <td>15</td> <td>25</td> </tr> <tr> <td>3</td> <td>11</td> <td>15</td> <td>15</td> <td>25</td> <td>3</td> <td>11</td> <td>15</td> <td>15</td> <td>25</td> <td>3</td> <td>11</td> <td>15</td> <td>15</td> <td>25</td> </tr> </tbody> </table> <p>g. <u>Cladding weight is the maximum weight of cladding materials in pounds per square foot of wall area. The 3 psf category typically applies to panel and lap siding materials; the 11 psf category typically applies to conventional 3-coat stucco of not more than 7/8- inch thickness; and 15 psf to 25 psf categories typically apply to adhered masonry veneers.</u></p>	FURRING MATERIAL	FURRING MEMBER	FASTENER TYPE AND MINIMUM SIZE	MINIMUM PENETRATION INTO WALL FURRING (INches) ^c	FASTENER SPACING IN FURRING (INches)	MAXIMUM THICKNESS OF FOAM SHEATHING ^d (INches)								16" O.C. Furring ^e				24" O.C. Furring ^e				Siding (Fasten) ^f		Siding (Sheat) ^f		Siding (Fasten) ^f		Siding (Sheat) ^f		3	11	15	15	25	3	11	15	15	25	3	11	15	15	25	3	11	15	15	25	3	11	15	15	25	3	11	15	15	25					
FURRING MATERIAL	FURRING MEMBER						FASTENER TYPE AND MINIMUM SIZE	MINIMUM PENETRATION INTO WALL FURRING (INches) ^c	FASTENER SPACING IN FURRING (INches)	MAXIMUM THICKNESS OF FOAM SHEATHING ^d (INches)																																																							
										16" O.C. Furring ^e				24" O.C. Furring ^e																																																			
		Siding (Fasten) ^f		Siding (Sheat) ^f		Siding (Fasten) ^f				Siding (Sheat) ^f																																																							
3	11	15	15	25	3	11	15	15	25	3	11	15	15	25																																																			
3	11	15	15	25	3	11	15	15	25	3	11	15	15	25																																																			
RB234-22	<p>Revise as follows:</p> <p>TABLE R703.16.1 CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b}</p> <p>Portions of table not shown remain unchanged.</p> <p>b. Where cladding is attached to wood structural panel sheathing only, fastening requirements shall be in accordance with Table R703.3.3. <u>For brick veneer tie connections to wood structural panels, refer to Table R703.8.4(2).</u></p>		X			Clarification.																																																											
RB235-22	<p>Add new text as follows:</p> <p>R703.18 Fiber-mat reinforced cementitious backer units. <u>Fiber-mat reinforced cementitious backer units used on exterior walls as a substrate for the application of exterior finish materials shall comply with ASTM C1325. Installation shall be in accordance with</u></p>		X			Clarification.																																																											

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<u>manufacturer's installation instructions. Backer units shall be installed using corrosion-resistant fasteners. Finish materials shall be installed in accordance with manufacturer's instructions.</u>					
RB236-22	<p>Revise as follows:</p> <p>R703.1.2 Wind resistance. Wall coverings, backing materials and their attachments shall be capable of resisting wind loads in accordance with Tables R301.2.1(1) and R301.2.1(2). Wind-pressure resistance of the siding, <u>exterior</u> soffit and backing materials shall be determined by ASTM E330 or other applicable standard test methods. Where wind-pressure resistance is determined by design analysis, data from <i>approved</i> design standards and analysis conforming to generally accepted engineering practice shall be used to evaluate the siding, <u>exterior</u> soffit and backing material and its fastening. All applicable failure modes including bending rupture of siding, fastener withdrawal and fastener head pull-through shall be considered in the testing or design analysis. Where the wall covering, <u>exterior</u> soffit and backing material resist wind load as an assembly, use of the design capacity of the assembly shall be permitted.</p> <p>R703.3.1 Exterior Soffit installation. <u>Exterior</u> Soffits shall comply with Section R704.</p> <p>R703.11.1 Installation. Vinyl siding, <u>exterior</u> soffit and accessories shall be installed in accordance with the manufacturer's instructions.</p> <p>SECTION R704 EXTERIOR SOFFITS</p> <p>R704.1 General wind limitations. Where the design wind pressure is 30 pounds per square foot (1.44 kPa) or less, <u>exterior</u> soffits shall comply with Section R704.2. Where the design wind pressure exceeds 30 pounds per square foot (1.44 kPa), <u>exterior</u> soffits shall comply with Section R704.3. The design wind pressure on <u>exterior</u> soffits shall be determined using the component and cladding loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.93 m²) and adjusted for height and exposure in accordance with Table R301.2.1(2).</p> <p>R704.2 Exterior Soffit installation where the design wind pressure is 30 psf or less. Where the design wind pressure is 30 pounds per square foot (1.44 kPa) or less, <u>exterior</u> soffit installation shall comply with Section R704.2.1, R704.2.2, R704.2.3 or R704.2.4. Exterior Soffit materials not addressed in</p>			X	Depends on installation.	Clarifies wind performance criteria for soffits.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>Sections R704.2.1 through R704.2.4 shall be in accordance with the manufacturer’s installation instructions.</p> <p>R704.2.1 Vinyl exterior soffit panels. Vinyl exterior soffit panels shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component in accordance with Figure R704.2.1(1). Where the unsupported span of exterior soffit panels is greater than 16 inches (406 mm), intermediate nailing strips shall be provided in accordance with Figure R704.2.1(2). Vinyl exterior soffit panels shall be installed in accordance with the manufacturer’s installation instructions. Fascia covers shall be installed in accordance with the manufacturer’s installation instructions.</p> <p>(Add 'exterior' in front of 'soffit' in three locations.) FIGURE R704.2.1(1) TYPICAL SINGLE-SPAN VINYL SOFFIT PANEL SUPPORT</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

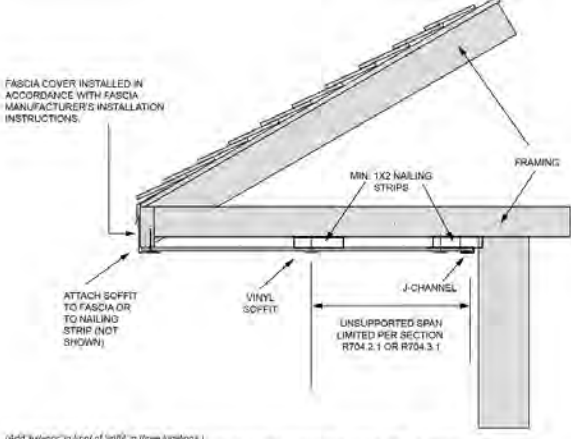
CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	 <p>(Add balance to total of table in three columns.) FIGURE R704.2(2) TYPICAL DOUBLE-SPAN VINYL SOFFIT PANEL SUPPORT</p> <p>R704.2.2 Fiber-cement exterior soffit panels. Fiber-cement exterior soffit panels shall be a minimum of 1/4 inch (6.4 mm) in thickness and shall comply with the requirements of ASTM C1186, Type A, minimum Grade II, or ISO 8336, Category A, minimum Class 2. Panel joints shall occur over framing or over wood structural panel sheathing. Exterior Soffit panels shall be installed with spans and fasteners in accordance with the manufacturer’s installation instructions.</p> <p>R704.2.3 Hardboard exterior soffit panels. Hardboard exterior soffit panels shall be not less than 7/16 inch (11.11 mm) in thickness and shall be fastened to framing or nailing strips with 2 1/2-inch by 0.113-inch (64 mm by 2.9 mm) siding nails spaced not more than 6 inches (152 mm) on center at panel edges and 12 inches (305 mm) on center at intermediate supports.</p> <p>R704.2.4 Wood structural panel exterior soffit. The minimum nominal thickness for wood structural panel exterior soffits shall be 3/8 inch (9.5 mm) and shall be fastened to framing or nailing strips with 2-inch by 0.099-inch (51 mm by 2.5 mm) nails. Fasteners shall be spaced not less than 6 inches (152 mm) on center at panel edges and 12 inches (305 mm) on center at intermediate supports.</p> <p>R704.3 Exterior Soffit installation where the design wind pressure exceeds 30 psf. Where the design wind pressure is greater than 30 psf, exterior soffit installation shall comply with Section R704.3.1, R704.3.2, R704.3.3 or R704.3.4. Exterior Soffit materials not addressed in Sections R704.3.1 through R704.3.4</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>shall be in accordance with the manufacturer’s installation instructions.</p> <p>R704.3.1 Vinyl exterior soffit panels. Vinyl exterior soffit panels and their attachments shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m²) and adjusted for height and exposure in accordance with Table R301.2.1(2) . Vinyl exterior soffit panels shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component in accordance with Figure R704.2.1(1). Where the unsupported span of exterior soffit panels is greater than 12 inches (305 mm), intermediate nailing strips shall be provided in accordance with Figure R704.2.1(2). Vinyl exterior soffit panels shall be installed in accordance with the manufacturer’s installation instructions. Fascia covers shall be installed in accordance with the manufacturer’s installation instructions.</p> <p>R704.3.2 Fiber-cement exterior soffit panels. Fiber-cement exterior soffit panels shall comply with Section R704.2.2 and shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m²) and adjusted for height and exposure in accordance with Table R301.2.1(2).</p> <p>R704.3.3 Hardboard exterior soffit panels. Hardboard exterior soffit panels shall comply with the manufacturer’s installation instructions and shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m²) and adjusted for height and exposure in accordance with Table R301.2.1(2) .</p> <p>R704.3.4 Wood structural panel exterior soffit. Wood structural panel exterior soffits shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m²) and adjusted for height and exposure in accordance with Table R301.2.1(2). Alternatively, wood structural panel exterior soffits shall be installed in accordance with Table R704.3.4.</p> <p>TABLE R704.3.4 PRESCRIPTIVE ALTERNATIVE FOR WOOD STRUCTURAL PANEL EXTERIOR SOFFIT ^{b, c, d, e}</p> <p>Portions of table not shown remain unchanged.</p> <p>b. Maximum spacing of exterior soffit framing members shall not exceed 24</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

inches.

RB237-22

Revise as follows:
SECTION R703 EXTERIOR WALL COVERING
SECTION R704 EXTERIOR SOFFITS AND FASCIAS

Facia cover installed in accordance with facia manufacturer's installation instructions. Fascia shall be installed in accordance with R704.4.

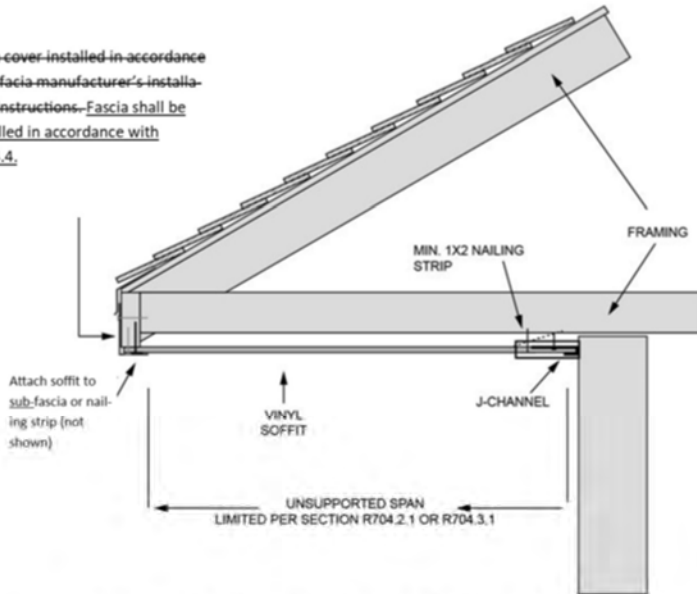


FIGURE R704.2.1(1) TYPICAL SINGLE-SPAN VINYL SOFFIT PANEL SUPPORT

Facia cover installed in accordance with facia manufacturer's installation instructions. Fascia shall be installed in accordance with R704.4.

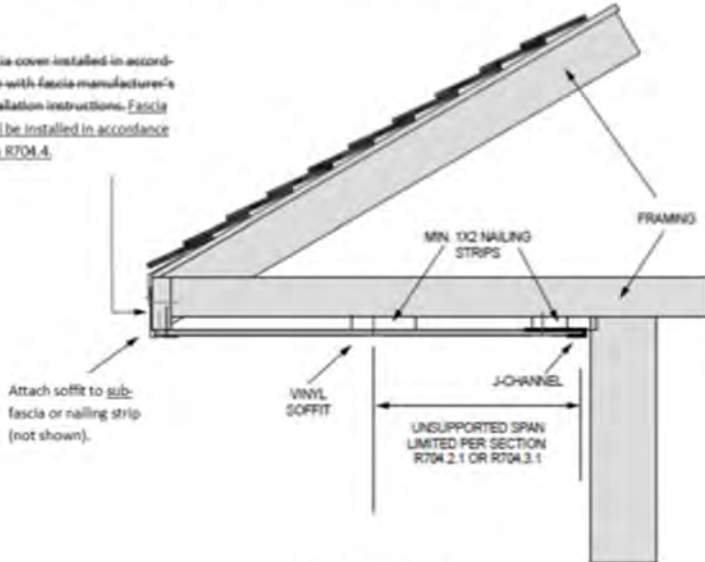


FIGURE R704.2.1(2) TYPICAL DOUBLE-SPAN VINYL SOFFIT PANEL SUPPORT

X

Depends on installation wind zone.

Clarifies wind performance criteria.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R704.3.1 Vinyl soffit panels. Vinyl soffit panels and their attachments shall be capable of resisting wind loads specified in Table R301.2.1(1) for walls using an effective wind area of 10 square feet (0.929 m²) and adjusted for height and exposure in accordance with Table R301.2.1(2) . Vinyl soffit panels shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component in accordance with Figure R704.2.1(1). Where the unsupported span of soffit panels is greater than 12 inches (305 mm), intermediate nailing strips shall be provided in accordance with Figure R704.2.1(2). Vinyl soffit panels shall be installed in accordance with the manufacturer’s installation instructions. Fascia covers shall be installed in accordance with the manufacturer’s installation instructions.</p> <p>Add new text as follows:</p> <p>R704.4 Fascia. <u>Fascia shall be installed in accordance with manufacturer’s installation instructions.</u></p> <p>R704.4.1 Aluminum Fascia. <u>Aluminum Fascia shall be installed in accordance with manufacturer’s installation instructions and comply with Sections R704.4.1.1 or R704.4.1.2.</u></p> <p>R704.4.1.1 Fascia installation where the design wind pressure is 30 psf or less. <u>Where the design wind pressure is 30 pounds per square foot (1.44kPA) or less, aluminum fascia shall be attached with one finish nail (1 ¼ x 0.057 x 0.177 head diameter) in the return leg spaced a maximum of 24 inches (610 mm) on center, and the fascia shall be inserted under the drip edge with at least 1 inch (305 mm) of fascia material covered by the drip edge. Where the fascia can not be inserted under the drip edge, the top edge of the fascia shall be secured using one finish nail (1 ¼ x 0.057 x 0.177 head diameter) located not more than 1 inch (25 mm) below the drip edge and spaced a maximum of 24 inches (610 mm) on center.</u></p> <p>R704.4.1.2 Fascia installation where the design wind pressure exceeds 30 psf. <u>Where the design wind pressure is greater than 30 pounds per square foot (1.44kPA), aluminum fascia shall be attached with one finish nail (1 ¼ x 0.057 x 0.177 head diameter) in the return leg spaced a maximum of 16 inches (406 m) on center and one finish nail located no more than 1 inch (25 mm) below the drip edge spaced a maximum of 16 inches (406 mm)</u></p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p><u>on center. As an alternative, the top edge of the fascia is permitted to be secured using utility trim installed beneath the drip edge with snap locks punched into the fascia spaced no more than 6 inches (152 mm) on center.</u></p>					
RB238-22	<p>Delete without substitution: R703.3.1 Soffit installation. Soffits shall comply with Section R704.</p> <p>Revise as follows: R703.3.2 Wind limitations. Where the design wind pressure exceeds 30 psf or where the limits of Table R703.3.2 are exceeded, the attachment of wall coverings and soffits shall be designed to resist the component and cladding loads specified in Table R301.2.1(1) for walls, adjusted for height and exposure in accordance with Table R301.2.1(2). For the determination of wall covering and soffit attachment, component and cladding loads shall be determined using an effective wind area of 10 square feet (0.93 m²). R703.3.3 Fasteners. Exterior wall coverings and roof overhang soffits shall be securely fastened with aluminum, galvanized, stainless steel or rust-preventative coated nails or staples in accordance with Table R703.3(1) or with other <i>approved</i> corrosion-resistant fasteners in accordance with the wall covering manufacturer’s installation instructions. Nails and staples shall comply with ASTM F1667. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire. Where fiberboard, gypsum, or foam plastic sheathing backing is used, nails or staples shall be driven into the studs. Where wood or wood structural panel sheathing is used, fasteners shall be driven into studs unless otherwise permitted to be driven into sheathing in accordance with either the siding manufacturer’s installation instructions or Table R703.3.3. R704.2.1 Vinyl and aluminum soffit panels. Vinyl and aluminum soffit panels shall be installed using <u>aluminum, galvanized, stainless steel or rust-preventative coated nails or staples or other <i>approved</i> corrosion-resistant fasteners</u> specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component in accordance with Figure R704.2.1(1). Where the unsupported</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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		Decrease	Neutral	Increase		

Sub Code:

span of soffit panels is greater than 16 inches (406 mm), intermediate nailing strips shall be provided in accordance with Figure R704.2.1(2). Vinyl and aluminum soffit panels shall be installed in accordance with the manufacturer's installation instructions. Fascia covers shall be installed in accordance with the manufacturer's installation instructions.

Delete and substitute as follows:

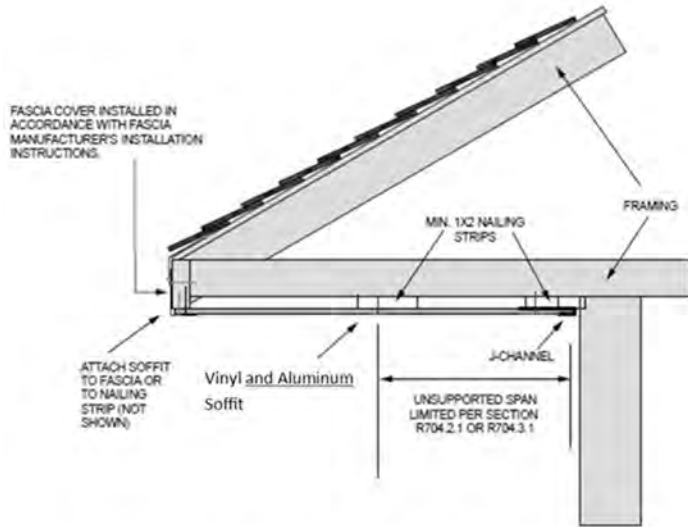


FIGURE R704.2.1(1) TYPICAL SINGLE-SPAN VINYL SOFFIT PANEL SUPPORT

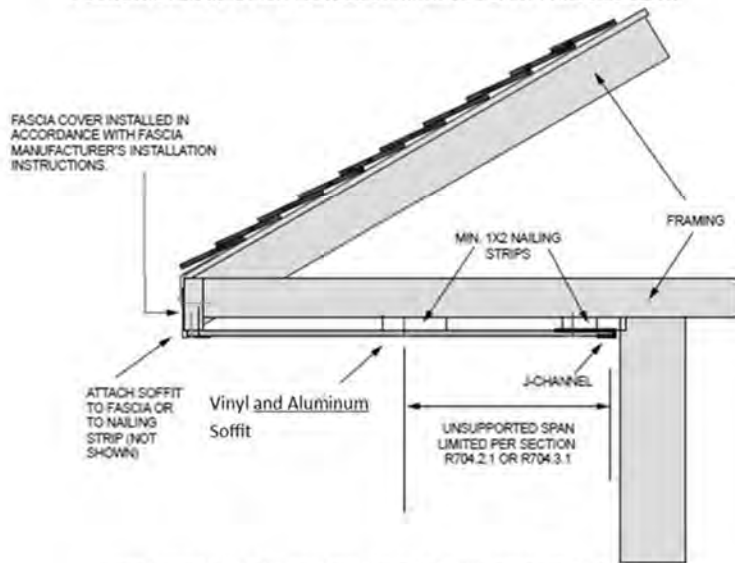


FIGURE R704.2.1(2) TYPICAL DOUBLE-SPAN VINYL SOFFIT PANEL SUPPORT

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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		Decrease	Neutral	Increase		
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RB239-22	<p>Revise as follows: TABLE R704.3.4 PRESCRIPTIVE ALTERNATIVE FOR WOOD STRUCTURAL PANEL SOFFIT ^{b, c, d, e} Portions of table not shown remain unchanged. e. Fastener spacing applies where wood Wood structural panels shall be attached to soffit framing members with specific gravity of at least 0.35 <u>is 0.42 or larger.</u> Where the specific gravity of the wood species used for soffit framing members is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, the fastener spacing shall be multiplied by 0.67 or the same fastener spacing as prescribed for galvanized steel nails shall be permitted to be used where RSRS-01 (2"× 0.099"× 0.266" head) nails replace 6d box nails and RSRS-03 (2-1/2"× 0.131"× 0.281" head) nails replace 8d common nails or 10d box nails. RSRS is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667. Framing members shall be minimum 2 × 3 nominal with the larger dimension in the cross section aligning with the length of fasteners to provide sufficient embedment depths.</p>		X			Provides prescriptive fastening options for soffit attachment to wood species with low specific gravity.
RB240-22	<p>Add new text as follows: <u>SECTION R705 BIPV SYSTEMS FOR EXTERIOR WALL COVERINGS AND FENESTRATION</u> <u>R705.1 Listing required.</u> <u>In addition to complying with other provisions of this code, BIPV systems used as exterior</u></p>		X			Clarification.
RB241-22	<p>Revise as follows: R802.1.5 R302.15 Fire-retardant-treated wood. Fire-retardant-treated wood (FRTW) is any wood product that, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E84 or UL 723, a listed flame spread index of 25 or less. In addition, the ASTM E84 or UL 723 test shall be continued for an additional 20-minute period and the flame front shall not progress more than 10.5 feet (3200 mm) beyond the center line of the burners at any time during the test. R802.1.5.1 <u>R302.15.1</u> Pressure process. For wood products impregnated with chemicals by a pressure process, the process shall be performed in closed vessels under pressures not less than 50 pounds per square inch gauge (psig) (344.7 kPa).</p>		X			Editorial.

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Sub Code:						
	<p>R802.1.5.2 R302.15.2 Other means during manufacture. For wood products impregnated with chemicals by other means during manufacture, the treatment shall be an integral part of the manufacturing process of the wood product. The treatment shall provide permanent protection to all surfaces of the wood product. The use of paints, coating, stains or other surface treatments is not an <i>approved</i> method of protection as required by this section.</p> <p>R802.1.5.3 R302.15.3 Testing. For fire-retardant-treated wood products, the front and back faces of the wood product shall be tested in accordance with and produce the results required in Section <u>R302.15</u> R802.1.5.</p> <p>R802.1.5.3.1 R302.15.3.1 Fire testing of wood structural panels. <i>Wood structural panels</i> shall be tested with a ripped or cut longitudinal gap of $\frac{1}{8}$ inch (3.2 mm).</p> <p>R802.1.5.4 R302.15.4 Labeling. In addition to the <i>labels</i> required by Section 802.1.1 for sawn lumber and Section 803.2.1 for <i>wood structural panels</i>, each piece of <i>fire-retardant-treated</i> lumber and <i>wood structural panel</i> shall be <i>labeled</i>. The <i>label</i> shall contain:</p> <ol style="list-style-type: none"> 1. The identification <i>mark</i> of an <i>approved agency</i> in accordance with Section 1703.5 of the International Building Code. 2. Identification of the treating manufacturer. 3. The name of the fire-retardant treatment. 4. The species of wood treated. 5. Flame spread index and <i>smoke-developed index</i>. 6. Method of drying after treatment. 7. Conformance to applicable standards in accordance with Sections <u>R302.15.5 through R302.15.10</u> R802.1.5.5 through R802.1.5.10. 8. For FRTW exposed to weather, or a damp or wet location, the words “No increase in the listed classification when subjected to the Standard Rain Test” (ASTM D2898). <p>R802.1.5.5 R302.15.5 Strength adjustments. Design values for untreated lumber and <i>wood structural panels</i> as specified in Section R802.1 shall be adjusted for fire-retardant-treated wood. Adjustments to design values shall be based on an <i>approved</i> method of investigation that takes into consideration the effects of the anticipated temperature and humidity to</p>					

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
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	<p>which the fire-retardant-treated wood will be subjected, the type of treatment and redrying procedures.</p> <p>R802.1.5.6 R302.15.6 Wood structural panels. The effect of treatment and the method of redrying after treatment, and exposure to high temperatures and high humidities on the flexure properties of fire-retardant-treated softwood plywood shall be determined in accordance with ASTM D5516. The test data developed by ASTM D5516 shall be used to develop adjustment factors, maximum loads and spans, or both for untreated plywood design values in accordance with ASTM D6305. Each manufacturer shall publish the allowable maximum loads and spans for service as floor and roof sheathing for their treatment.</p> <p>R802.1.5.7 R302.15.7 Lumber. For each species of wood treated, the effect of the treatment and the method of redrying after treatment and exposure to high temperatures and high humidities on the allowable design properties of fire-retardant-treated lumber shall be determined in accordance with ASTM D5664. The test data developed by ASTM D5664 shall be used to develop modification factors for use at or near room temperature and at elevated temperatures and humidity in accordance with ASTM D6841. Each manufacturer shall publish the modification factors for service at temperatures of not less than 80°F (27°C) and for roof framing. The roof framing modification factors shall take into consideration the climatological location.</p> <p>R802.1.5.8 R302.15.8 Exposure to weather. Where fire-retardant-treated wood is exposed to weather or damp or wet locations, it shall be identified as “Exterior” to indicate there is not an increase in the <i>listed</i> flame spread index as defined in Section R302.15 R802.1.5 when subjected to ASTM D2898.</p> <p>R802.1.5.9 R302.15.9 Interior applications. Interior fire-retardant-treated wood shall have a moisture content of not over 28 percent when tested in accordance with ASTM D3201 procedures at 92-percent relative humidity. Interior fire-retardant-treated wood shall be tested in accordance with Section <u>R302.15.6</u> or <u>R302.15.7</u> R802.1.5.6 or R802.1.5.7. Interior fire-retardant-treated wood designated as Type A shall be tested in accordance with the provisions of this section.</p>					

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	<p>R802.1.5.10 R302.15.10 Moisture content. Fire-retardant-treated wood shall be dried to a moisture content of 19 percent or less for lumber and 15 percent or less for <i>wood structural panels</i> before use. For wood kiln dried after treatment (KDAT) the kiln temperatures shall not exceed those used in kiln drying the lumber and plywood submitted for the tests described in Section R802.1.5.6 R302.15.6 for plywood and R302.15.7 R802.1.5.7 for lumber.</p>					
RB243-22	<p>Revise as follows:</p> <p>R802.1.5.3.1 Fire testing of <u>fire-retardant-treated wood structural panels</u>. Wood <u>Fire-retardant-treated wood structural panels</u> shall be tested with a ripped or cut longitudinal gap of 1/8 inch (3.2 mm).</p> <p>R802.1.5.4 Labeling. In addition to the <i>labels</i> required by Section 802.1.1 for sawn lumber and Section 803.2.1 for <i>wood structural panels</i>, each piece of <i>fire-retardant-treated</i> lumber and <u>fire-retardant-treated wood structural panel</u> shall be <i>labeled</i>. The <i>label</i> shall contain:</p> <ol style="list-style-type: none"> 1. The identification <i>mark</i> of an <i>approved agency</i> in accordance with Section 1703.5 of the International Building Code. 2. Identification of the treating manufacturer. 3. The name of the fire-retardant treatment. 4. The species of wood treated. 5. Flame spread index and <i>smoke-developed index</i>. 6. Method of drying after treatment. 7. Conformance to applicable standards in accordance with Sections R802.1.5.5 through R802.1.5.10. 8. For FRTW exposed to weather, or a damp or wet location, the words “No increase in the listed classification when subjected to the Standard Rain Test” (ASTM D2898). <p>R802.1.5.5 Strength adjustments. Design values for untreated lumber and <i>wood structural panels</i> as specified in Section R802.1 shall be adjusted for fire-retardant-treated wood. Adjustments to design values shall be based on an <i>approved</i> method of investigation that takes into consideration the effects of the anticipated temperature and humidity to which the fire-retardant-treated wood will be subjected, the type of treatment and redrying procedures.</p>		X		Editorial.	

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	<p>R802.1.5.6 Wood <u>Fire-retardant-treated wood structural panels.</u> The effect of treatment and the method of redrying after treatment, and exposure to high temperatures and high humidities on the flexure properties of fire-retardant-treated softwood plywood shall be determined in accordance with ASTM D5516. The test data developed by ASTM D5516 shall be used to develop adjustment factors, maximum loads and spans, or both for untreated plywood design values in accordance with ASTM D6305. Each manufacturer shall publish the allowable maximum loads and spans for service as floor and roof sheathing for their treatment.</p> <p>R802.1.5.7 Lumber <u>Fire-retardant-treated lumber.</u> For each species of wood treated, the effect of the treatment and the method of redrying after treatment and exposure to high temperatures and high humidities on the allowable design properties of fire-retardant-treated lumber shall be determined in accordance with ASTM D5664. The test data developed by ASTM D5664 shall be used to develop modification factors for use at or near room temperature and at elevated temperatures and humidity in accordance with ASTM D6841. Each manufacturer shall publish the modification factors for service at temperatures of not less than 80°F (27°C) and for roof framing. The roof framing modification factors shall take into consideration the climatological location.</p> <p>R802.1.5.10 Moisture content. Fire-retardant-treated wood shall be dried to a moisture content of 19 percent or less for <u>fire-retardant treated</u> lumber and 15 percent or less for <u>fire-retardant-treated wood structural panels</u> before use. For wood kiln dried after treatment (KDAT) the kiln temperatures shall not exceed those used in kiln drying the <u>fire-retardant-treated wood structural panels</u> and <u>fire-retardant-treated</u> lumber and plywood submitted for the tests described in Section R802.1.5.6 for <u>fire-retardant-treated wood structural panels</u> plywood and R802.1.5.7 for <u>fire-retardant-treated</u> lumber.</p>																																																																								
RB244-22	<p>Revise as follows: TABLE R802.5.2(1) RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS⁶ Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">RAFTER SLOPE</th> <th rowspan="2">RAFTER SPACING (inches)</th> <th colspan="12">GROUND SNOW LOAD (psf)</th> </tr> <tr> <th colspan="4">20'</th> <th colspan="4">30'</th> <th colspan="4">40'</th> </tr> <tr> <th colspan="2"></th> <th colspan="12" style="text-align: center;">Roof spans (feet)</th> </tr> <tr> <th colspan="2"></th> <th>12</th><th>24</th><th>36</th><th>12</th><th>24</th><th>36</th><th>12</th><th>24</th><th>36</th><th>12</th><th>24</th><th>36</th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td colspan="12" style="text-align: center;">Required number of 1/2" common nails per heel joint (nails dimension 16" x 16")</td> </tr> </tbody> </table>	RAFTER SLOPE	RAFTER SPACING (inches)	GROUND SNOW LOAD (psf)												20'				30'				40'						Roof spans (feet)														12	24	36	12	24	36	12	24	36	12	24	36			Required number of 1/2" common nails per heel joint (nails dimension 16" x 16")													X		Editorial.
RAFTER SLOPE	RAFTER SPACING (inches)			GROUND SNOW LOAD (psf)																																																																					
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RB247-22	<p>Revise as follows: R802.11 Roof tie uplift resistance. <i>Roof assemblies</i> shall have uplift resistance in accordance with Sections R802.11.1 and R802.11.2.</p> <p>Exceptions: Rafters or trusses shall be permitted to be attached to their supporting wall assemblies in accordance with Table R602.3(1) where either of the following occur:</p> <ol style="list-style-type: none"> 1. Where <u>the specific gravity of the wood species used for wall framing is greater than or equal to 0.42 in accordance with AWC NDS and the uplift force per rafter or truss does not exceed 200 pounds (90.8 kg) as determined by Table R802.11.</u> 2. Where the basic wind speed does not exceed 115 miles per hour (51.4 m/s), the wind exposure category is B, the roof pitch is 5 units vertical in 12 units horizontal (42-percent slope) or greater, the roof span is 32 feet (9754 mm) or less, and rafters and trusses are spaced not more than 24 inches (610 mm) on center. 			X	Increased cost associated with use of lower specific gravity wood species	Clarification.
RB249-22	<p>Revise as follows: R807.1 Attic access. Buildings with combustible ceiling or roof construction <u>attics</u> shall have an attic access opening to attic areas that have a vertical height of 30 inches (762 mm) or greater over an area of not less than 30 square feet (2.8 m²). The vertical height shall be measured from the top of the ceiling framing members to the underside of the roof framing members.</p> <p>The rough-framed opening shall be not less than 22 inches by 30 inches (559 mm by 762 mm) and shall be located in a hallway or other location with <i>ready access</i>. Where located in a wall, the opening shall be not less than 22 inches wide by 30 inches high (559 mm wide by 762 mm high). Where the access is located in a ceiling, minimum unobstructed headroom in the attic space shall be 30 inches (762 mm) at some point above the access measured vertically from the bottom of ceiling framing members. See Section M1305.1.2 for access requirements where mechanical <i>equipment</i> is located in <i>attics</i>.</p>			X	Increase cost due to expansion of attic access requirements to all construction types.	Expansion of attic access requirements to all construction types.
RB250-22	<p>Revise as follows: R807.1 Attic access. Buildings with combustible ceiling or roof construction shall have an attic access opening to attic areas that have a vertical height of 30 inches (762 mm) or greater over an area of not less than 30 square feet (2.8 m²). The</p>		X			Clarification.

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	<p>vertical height shall be measured from the top of the ceiling framing members to the underside of the roof framing members.</p> <p>The rough-framed opening shall be not less than 22 inches by 30 inches (559 mm by 762 mm) and shall be located in a hallway or other location with <i>ready access</i>. Where located in a wall, the opening shall be not less than 22 inches wide by 30 inches high (559 mm wide by 762 mm high). Where the access is located in a ceiling, minimum unobstructed headroom in the attic space shall be 30 inches (762 mm) along at least one side at some point above the access measured vertically from the bottom of the ceiling framing members. See Section M1305.1.2 for access requirements where mechanical <i>equipment</i> is located in <i>attics</i>.</p>					
RB251-22	<p>Revise as follows:</p> <p>R902.1 Roof covering materials. Roofs shall be covered with materials as set forth in Sections R904 and R905. Class A, B or C <u>roof assemblies</u> roofing shall be installed in <i>jurisdictions</i> designated by law as requiring their use or where the edge of the roof is less than 3 feet (914 mm) from a <i>lot line</i>. <u>Where Class A, B, or C roof assemblies are required, they shall be tested in accordance with ASTM E108 or UL 790. Where required, the roof assembly shall be listed and identified as to Class by an approved testing agency. Class A, B and C roofing required by this section to be listed shall be tested in accordance with ASTM E108 or UL 790.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Class A <i>roof assemblies</i> include those with coverings of brick, masonry and exposed concrete <i>roof deck</i>. 2. Class A <i>roof assemblies</i> include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible decks. 3. Class A <i>roof assemblies</i> include minimum 16 ounces per square foot copper sheets installed over combustible decks. 4. Class A <i>roof assemblies</i> include slate installed over <i>underlayment</i> over combustible decks. 		X			Editorial.
RB252-22	<p>Revise as follows:</p> <p>R902.1 Roof covering materials <u>assemblies</u>. Roofs shall be covered with materials as set forth in <u>Section</u> Sections R904 and or with <u>roof coverings</u> as set forth in Section R905. Class A, B or</p>		X			Editorial.

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	<p>C roofing <u>roof assemblies</u> shall be installed in <i>jurisdictions</i> designated by law as requiring their use or where the edge of the roof is less than 3 feet (914 mm) from a <i>lot line</i>. <u>Where Class A, B or C roof assemblies are required, they shall be tested in accordance with ASTM E108 or UL 790. Where required, the roof assembly shall be listed Class A, B and C roofing required by this section to be listed shall be tested in accordance with ASTM E108 or UL 790.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Class A <i>roof assemblies</i> include those with coverings of brick, masonry and exposed concrete <i>roof deck</i>. 2. Class A <i>roof assemblies</i> include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible decks. 3. Class A <i>roof assemblies</i> include minimum 16 ounces per square foot copper sheets installed over combustible decks. 4. Class A <i>roof assemblies</i> include slate installed over <i>underlayment</i> over combustible decks. 					
RB254-22	<p>Revise as follows:</p> <p>R302.2.3 Continuity. The fire-resistance-rated wall or assembly separating <i>townhouse units</i> shall be continuous from the foundation to the underside of the roof sheathing, <u><i>roof deck</i></u> or slab. The fire-resistance rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached enclosed <i>accessory structures</i>.</p> <p>R302.2.4 Parapets for townhouses. Parapets constructed in accordance with Section R302.2.5 shall be constructed for <i>townhouses</i> as an extension of exterior walls or common walls separating <i>townhouse units</i> in accordance with the following:</p> <ol style="list-style-type: none"> 1. Where roof surfaces adjacent to the wall or walls are at the same elevation, the parapet shall extend not less than 30 inches (762 mm) above the roof surfaces. 2. Where <u><i>roof decks</i></u> surfaces adjacent to the wall or walls are at different elevations and the higher <u><i>roof deck</i></u> is not more than 30 inches (762 mm) above the lower <u><i>roof deck</i></u>, the parapet shall extend not less than 30 inches (762 mm) above the lower <u><i>roof deck</i></u> surface. <p>Exception: A parapet is not required in the preceding two cases where the roof covering complies with a minimum Class</p>		X		Clarification.	

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>C rating as tested in accordance with ASTM E108 or UL 790 and the roof decking <u>roof deck</u> or sheathing is of <i>noncombustible materials</i> or fire-retardant-treated wood for a distance of 4 feet (1219 mm) on each side of the wall or walls, or one layer of 5/8-inch (15.9 mm) Type X gypsum board is installed directly beneath the roof decking or sheathing, supported by not less than nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members, for a distance of not less than 4 feet (1219 mm) on each side of the wall or walls and any openings or penetrations in the <u>roof deck</u> are not within 4 feet (1219 mm) of the common walls. Fire-retardant-treated wood shall meet the requirements of Sections R802.1.5 and R803.2.1.2.</p> <p>3. A parapet is not required where roof surfaces adjacent to the wall or walls are at different elevations and the higher <u>roof deck</u> is more than 30 inches (762 mm) above the lower <u>roof deck</u>. The common wall construction from the lower <u>roof deck</u> to the underside of the higher <u>roof deck</u> shall have not less than a 1-hour fire-resistance rating. The wall shall be rated for exposure from both sides.</p> <p>R902.1 Roof covering materials. Roofs <u>Roof decks</u> shall be covered with materials as set forth in Sections R904 and R905. Class A, B or C roofing shall be installed in <i>jurisdictions</i> designated by law as requiring their use or where the edge of the <u>roof deck</u> is less than 3 feet (914 mm) from a <i>lot line</i>. Class A, B and C roofing required by this section to be <i>listed</i> shall be tested in accordance with ASTM E108 or UL 790.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Class A <i>roof assemblies</i> include those with coverings of brick, masonry and exposed concrete <u>roof deck</u>. 2. Class A <i>roof assemblies</i> include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible <u>roof decks</u>. 3. Class A <i>roof assemblies</i> include minimum 16 ounces per square foot copper sheets installed over combustible <u>roof decks</u>. 4. Class A <i>roof assemblies</i> include slate installed over <i>underlayment</i> over combustible <u>roof decks</u>. <p>R905.1.1 Underlayment. <i>Underlayment</i> for asphalt shingles, clay and concrete tile, <i>metal roof shingles</i>, mineral-surfaced</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>roll roofing, slate and slate-type shingles, wood shingles, wood shakes, <i>metal roof panels</i> and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. <i>Underlayment</i> materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a <i>label</i> indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). <i>Underlayment</i> shall be applied in accordance with Table R905.1.1(2). <i>Underlayment</i> shall be attached in accordance with Table R905.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. As an alternative, self-adhering polymer-modified bitumen underlayment bearing a label indicating compliance with ASTM D1970 and installed in accordance with both the <i>underlayment</i> manufacturer’s and roof covering manufacturer’s instructions for the <i>roof deck</i> material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted. 2. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane bearing a <i>label</i> indicating compliance with ASTM D1970, installed in accordance with the <i>manufacturer’s installation instructions</i> for the <i>roof deck</i> material, shall be applied over all joints in the <i>roof deck decking</i>. An <i>approved underlayment</i> complying with Table R905.1.1(1) for the applicable roof covering <p>R905.2.1 Sheathing requirements. Asphalt shingles shall be fastened to <u><i>wood structural panels</i></u> or solid lumber sheathing. solidly sheathed decks.</p> <p>R905.3.1 Deck Sheathing requirements. Concrete and clay tile shall be installed only over solid sheathing <u><i>wood structural panels</i></u> or solid lumber sheathing.</p> <p>Exception: Spaced lumber sheathing in accordance with Section R803.1 shall be permitted in <i>Seismic Design Categories A, B and C</i>.</p> <p>R905.3.2 Deck-slope Slope. Clay and concrete roof tile shall be installed on roof slopes of 2¹/₂ units vertical in 12 units horizontal (25- percent slope) or greater. For roof slopes from 2¹/₂ units vertical in 12 units horizontal (25-percent slope) to</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>4 units vertical in 12 units horizontal (33-percent slope), double <i>underlayment</i> application is required in accordance with Section R905.3.3.</p> <p>R905.3.6 Fasteners. Nails shall be corrosion resistant and not less than 11-gage [0.120 inch (3 mm)], ⁵/₁₆-inch (11 mm) head, and of sufficient length to penetrate the <i>roof deck</i> not less than ³/₄ inch (19 mm) or through the thickness of the <i>roof deck</i>, whichever is less. Attaching wire for clay or concrete tile shall not be smaller than 0.083 inch (2 mm). Perimeter fastening areas include three tile courses but not less than 36 inches (914 mm) from either side of hips or ridges and edges of eaves and gable rakes.</p> <p>R905.4.1 Deck Sheathing requirements. <i>Metal roof shingles</i> shall be <u>fastened to wood structural panels, solid lumber sheathing, or closely-fitted lumber sheathing</u> applied to a solid or closely-fitted deck, except where the roof covering is specifically designed to be applied to spaced <u>lumber sheathing</u>.</p> <p>R905.4.2 Deck Slope Slope. <i>Metal roof shingles</i> shall not be installed on roof slopes below 3 units vertical in 12 units horizontal (25- percent slope).</p> <p>R905.4.4.1 Wind resistance of metal roof shingles. <i>Metal roof shingles</i> applied <u>fastened to wood structural panels, solid lumber sheathing or closely-fitted lumber sheathing</u> a solid or closely-fitted deck shall be tested in accordance with ASTM D3161, FM 4474, UL 580 or UL 1897. <i>Metal roof shingles</i> tested in accordance with ASTM D3161 shall meet the classification requirements of Table R905.4.4.1 for the appropriate maximum basic wind speed and the metal shingle packaging shall bear a <i>label</i> to indicate compliance with ASTM D3161 and the required classification in Table R905.2.4.1.</p> <p>R905.5.1 Deck Sheathing requirements. Mineral-surfaced roll roofing shall be fastened to <u>wood structural panels or solid lumber sheathing</u>. solidly sheathed roofs.</p> <p>R905.5.2 Deck Slope Slope. Mineral-surfaced roll roofing shall not be applied on roof slopes below 1 unit vertical in 12 units horizontal (8- percent slope).</p> <p>R905.6.1 Deck Sheathing requirements. Slate shingles shall be fastened to <u>wood structural panels or solid lumber sheathing</u>. Solidly sheathed roofs.</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R905.6.2 Deck slope Slope. Slate shingles shall be used only on slopes of 4 units vertical in 12 units horizontal (33-percent slope) or greater.</p> <p>R905.7.1 Deck Sheathing requirements. Wood shingles shall be <u>fastened to wood structural panels, solid lumber sheathing, or spaced lumber sheathing.</u> installed on solid or spaced sheathing. Where spaced <u>lumber</u> sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners.</p> <p>R905.7.1.1 Wood Structural Panels. <u>Wood structural panels used as sheathing for wood shingles shall be plywood that conforms to DOC PS1 and shall be identified by a grade mark or certificate of inspection issued by an approved agency.</u></p> <p>R905.7.1.12 Solid sheathing required. In areas where the average daily temperature in January is 25°F (-4°C) or less, <u>wood structural panels or solid lumber</u> sheathing is required on that portion of the <u>roof deck</u> requiring the application of an ice barrier.</p> <p>R905.7.2 Deck slope Slope. Wood shingles shall be installed on slopes of 3 units vertical in 12 units horizontal (25-percent slope) or greater.</p> <p>R905.8.1 Deck Sheathing requirements. Wood shakes shall be <u>fastened to wood structural panels, solid lumber sheathing, or spaced lumber sheathing.</u> used only on solid or spaced sheathing. Where spaced <u>lumber</u> sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. Where 1-inch by 4-inch (25 mm by 102 mm) spaced <u>lumber</u> sheathing is installed at 10 inches (254 mm) on center, additional 1-inch by 4-inch (25 mm by 102 mm) boards shall be installed between the sheathing boards.</p> <p>R905.8.1.1 Wood Structural Panels. <u>Wood structural panels used as sheathing for wood shakes shall be plywood that conforms to DOC PS1 and shall be identified by a grade mark or certificate of inspection issued by an approved agency.</u></p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R905.8.1.12 Solid sheathing required. In areas where the average daily temperature in January is 25°F (-4°C) or less, <u>wood structural panels</u> or solid <u>lumber sheathing</u> is required on that portion of the <u>roof deck</u> requiring an ice barrier.</p> <p>R905.8.2 Deck-slope Slope. Wood shakes shall only be used on slopes of 3 units vertical in 12 units horizontal (25-percent slope) or greater.</p> <p>R905.10.1 Deck Sheathing requirements. <i>Metal roof panel</i> roof coverings shall be <u>fastened to wood structural panels, solid lumber sheathing, or applied to solid or spaced lumber sheathing</u>, except where the roof covering is specifically designed to be applied to spaced supports.</p> <p>R905.16.1 Deck Sheathing requirements. <i>Photovoltaic shingles</i> shall be <u>fastened to wood structural panels, solid lumber sheathing, or closely-fitted lumber sheathing</u>, applied to a solid or closely-fitted deck, except where the roof covering is specifically designed to be applied over spaced <u>lumber sheathing</u>.</p> <p>R905.16.2 Deck-slope Slope. <i>Photovoltaic shingles</i> shall be used only on roof slopes of 2 units vertical in 12 units horizontal (2:12) or greater.</p> <p>R905.17.1 Deck Sheathing requirements. <i>BIPV roof panels</i> shall be <u>fastened to wood structural panels, solid lumber sheathing, or closely-fitted lumber sheathing</u>, applied to a solid or closely-fitted deck, except where the <i>roof covering</i> is specifically designed to be applied over spaced <u>lumber sheathing</u>.</p> <p>R905.17.2 Deck-slope Slope. <i>BIPV roof panels</i> shall be used only on roof slopes of 2 units vertical in 12 units horizontal (17-percent slope) or greater.</p>					
RB258-22	<p>Revise as follows:</p> <p>R905.1.1 Underlayment. <i>Underlayment</i> for asphalt shingles, clay and concrete tile, <i>metal roof shingles</i>, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, <i>metal roof panels</i> and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. <i>Underlayment</i> materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a <i>label</i> indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). <i>Underlayment</i> shall</p>		X			Clarifications.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE							
		Decrease	Neutral	Increase									
Sub Code:													
	<p>be applied in accordance with Table R905.1.1(2). <i>Underlayment</i> shall be attached in accordance with Table R905.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> As an alternative, self-adhering polymer-modified bitumen underlayment bearing a label indicating compliance with ASTM D1970 and installed in accordance with both the underlayment manufacturer’s and roof covering manufacturer’s instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane bearing a <i>label</i> indicating compliance with ASTM D1970, installed in accordance with the <i>manufacturer’s installation instructions</i> for the deck material, shall be applied over all joints in the roof decking. An <i>approved underlayment</i> complying with Table R905.1.1(1) for the applicable roof covering and design wind speed areas where wind design is not required in accordance with Figure R301.2.1.1 shall be applied over the entire roof over the 4-inch-wide (102 mm) membrane strips. Underlayment shall be applied in accordance with Table R905.1.1(2) using the application requirements for areas where wind design is not required in accordance with Figure R301.2.1.1. Underlayment shall be attached in accordance with Table R905.1.1(3) for the applicable roof covering and design wind speed. 												
RB259-22	<p>Revise as follows:</p> <p>TABLE R905.1.1(1) UNDERLAYMENT TYPES</p> <p>Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">ROOF COVERING</th> <th style="width: 15%;">SECTION</th> <th style="width: 30%;">AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1</th> <th style="width: 40%;">AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1</th> </tr> </thead> <tbody> <tr> <td>Photovoltaic shingles</td> <td>R905.16</td> <td>ASTM D226 Type I or II 889 Type I, II, III or IV ASTM D6757</td> <td>ASTM D226 Type II ASTM D4869 Type III or Type IV</td> </tr> </tbody> </table>	ROOF COVERING	SECTION	AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	Photovoltaic shingles	R905.16	ASTM D226 Type I or II 889 Type I, II, III or IV ASTM D6757	ASTM D226 Type II ASTM D4869 Type III or Type IV		X		Added design options.
ROOF COVERING	SECTION	AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1										
Photovoltaic shingles	R905.16	ASTM D226 Type I or II 889 Type I, II, III or IV ASTM D6757	ASTM D226 Type II ASTM D4869 Type III or Type IV										
RB260-22	<p>Revise as follows:</p> <p>R905.1.1 Underlayment. <i>Underlayment</i> for asphalt shingles, clay and concrete tile, <i>metal roof shingles</i>, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, <i>metal roof panels</i> and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. <i>Underlayment</i> materials required to comply with ASTM D226,</p>		X		-	Clarification.							

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																
		Decrease	Neutral	Increase																		
Sub Code:																						
	<p>D1970, D4869, and D6757 ASTM D2626 Type I and or <u>ASTM D6380 Class M</u> shall bear a <i>label</i> indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). <i>Underlayment</i> shall be applied in accordance with Table R905.1.1(2). <i>Underlayment</i> shall be attached in accordance with Table R905.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> As an alternative, self-adhering polymer-modified bitumen underlayment bearing a label indicating compliance with ASTM D1970 and installed in accordance with both the <i>underlayment</i> manufacturer's and roof covering manufacturer's instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane bearing a <i>label</i> indicating compliance with ASTM D1970, installed in accordance with the <i>manufacturer's installation instructions</i> for the deck material, shall be applied over all joints in the roof decking. An <i>approved underlayment</i> complying with Table R905.1.1(1) for the applicable roof covering. <p>TABLE R905.1.1(1) UNDERLAYMENT TYPES Portions of table not shown remain unchanged.</p> <table border="1"> <thead> <tr> <th>ROOF COVERING</th> <th>SECTION</th> <th>AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1</th> <th>AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1</th> </tr> </thead> <tbody> <tr> <td>Clay and concrete tile</td> <td>R905.3</td> <td>ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M <u>mineral-surfaced roll roofing</u></td> <td>ASTM D226 Type II</td> </tr> <tr> <td>Wood shakes <u>on solid sheathing</u></td> <td>R905.8</td> <td>ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV</td> <td>ASTM D226 Type II ASTM D4869 Type III or Type IV</td> </tr> <tr> <td>Metal panels <u>on solid sheathing</u></td> <td>R905.10</td> <td><u>Manufacturer's instructions</u> ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV</td> <td>ASTM D226 Type II ASTM D4869 Type III or Type IV</td> </tr> </tbody> </table>	ROOF COVERING	SECTION	AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	Clay and concrete tile	R905.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M <u>mineral-surfaced roll roofing</u>	ASTM D226 Type II	Wood shakes <u>on solid sheathing</u>	R905.8	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or Type IV	Metal panels <u>on solid sheathing</u>	R905.10	<u>Manufacturer's instructions</u> ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or Type IV					
ROOF COVERING	SECTION	AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1																			
Clay and concrete tile	R905.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M <u>mineral-surfaced roll roofing</u>	ASTM D226 Type II																			
Wood shakes <u>on solid sheathing</u>	R905.8	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or Type IV																			
Metal panels <u>on solid sheathing</u>	R905.10	<u>Manufacturer's instructions</u> ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV	ASTM D226 Type II ASTM D4869 Type III or Type IV																			
RB261-22	<p>Revise as follows: R905.1.1 Underlayment. <i>Underlayment</i> for asphalt shingles, clay and concrete tile, <i>metal roof shingles</i>, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, <i>metal roof panels</i> and photovoltaic shingles <i>BIPV roof coverings</i> shall conform to the applicable standards listed in this chapter. <i>Underlayment</i> materials required to comply with ASTM D226, D1970, D4869, and D6757 ASTM D2626 Type I and or</p>		X			Clarification.																

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		

Sub Code:

ASTM D6380 Class M shall bear a *label* indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). *Underlayment* shall be applied in accordance with Table R905.1.1(2). *Underlayment* shall be attached in accordance with Table R905.1.1(3).

Exceptions:

1. As an alternative, self-adhering polymer-modified bitumen underlayment bearing a label indicating compliance with ASTM D1970 and installed in accordance with both the *underlayment* manufacturer's and roof covering manufacturer's instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted.
2. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane bearing a *label* indicating compliance with ASTM D1970, installed in accordance with the *manufacturer's installation instructions* for the deck material, shall be applied over all joints in the roof decking. An *approved underlayment* complying with Table R905.1.1(1) for the applicable roof covering.

TABLE R905.1.1(1) UNDERLAYMENT TYPES

Portions of table not shown remain unchanged.

ROOF COVERING	SECTION	AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1
Photovoltaic shingles BIPV roof coverings	R905.16	ASTM D4869 Type I, II, III or IV ASTM D6757	ASTM D4869 Type III or Type IV

TABLE R905.1.1(2) UNDERLAYMENT APPLICATION

Portions of table not shown remain unchanged.

ROOF COVERING	SECTION	AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1
shingles BIPV roof coverings	R905.16	For roof slopes from 2 units vertical in 12 units horizontal (2:12), up to 4 units vertical in 12 units horizontal (4:12), underlayment shall be two layers applied in the following manner: apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eaves, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. Distortions in the underlayment shall not interfere with the ability of the shingles to seal. End laps shall be 4 inches and shall be offset by 6 feet. For roof slopes of 4 units vertical in 12 units horizontal (4:12) or greater, underlayment shall be one layer applied in the following manner: underlayment shall be applied shingle fashion, parallel to and starting from the eave and lapped 2 inches. Distortions in the underlayment shall not interfere with the ability of the shingles to seal. End laps shall be 4 inches and shall be offset by 6 feet.	Underlayment shall be two layers applied in the following manner: apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eaves, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. Distortions in the underlayment shall not interfere with the ability of the shingles to seal. End laps shall be 4 inches and shall be offset by 6 feet.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R905.16 Photovoltaic BIPV shingles. The installation of <i>photovoltaic BIPV</i> shingles shall comply with the provisions of this section, Section R324 and NFPA 70.</p> <p>R905.16.1 Deck requirements. <i>Photovoltaic BIPV</i> shingles shall be applied to a solid or closely-fitted deck, except where the roof covering is specifically designed to be applied over spaced sheathing.</p> <p>R905.16.2 Deck slope. <i>Photovoltaic BIPV</i> shingles shall be used only on roof slopes of 2 units vertical in 12 units horizontal (2:12) or greater.</p> <p>R905.16.4 Material standards. <i>Photovoltaic BIPV</i> shingles shall be <i>listed</i> and <i>labeled</i> in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.</p> <p>R905.16.5 Attachment. <i>Photovoltaic BIPV</i> shingles shall be attached in accordance with the manufacturer’s installation instructions.</p> <p>R905.16.6 Wind resistance. <i>Photovoltaic BIPV</i> shingles shall comply with the classification requirements of Table R905.16.6 for the appropriate maximum basic wind speed.</p> <p>TABLE R905.16.6 Classification of Photovoltaic BIPV Shingles Portions of table not shown remain unchanged.</p> <p>R324.5.1 Photovoltaic BIPV shingles. Photovoltaic <i>BIPV</i> shingles shall comply with Section R905.16.</p>					
RB264-22	<p>Revise as follows:</p> <p>R905.2.8.2 Valleys. Valley linings shall be installed in accordance with the manufacturer’s instructions before applying shingles. Valley linings of the following types shall be permitted:</p> <ol style="list-style-type: none"> 1. For open valleys (valley lining exposed) lined with metal, the valley lining shall be not less than 24 inches (610 mm) wide and of any of the corrosion-resistant metals in Table R905.2.8.2. 2. For open valleys, valley lining of two plies of mineral-surfaced roll roofing, complying with ASTM D3909 or ASTM D6380 Class M, shall be permitted. The bottom layer shall be 18 inches (457 mm) and the top layer not less than 36 inches (914 mm) wide. 3. For closed valleys (valley covered with shingles), valley lining of one ply of smooth roll roofing complying with ASTM D6380 and not less than 36 inches wide (914 mm) or valley lining as described in Item 1 or 2 shall be permitted. Self-adhering 		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	polymer-modified bitumen <i>underlayment</i> complying with ASTM D1970 <u>and not less than 36 inches (914 mm) wide shall be permitted in lieu of the lining material.</u>					
RB265-22	<p>Revise as follows: R905.2.8.4 Other flashing. Flashing against a vertical front wall, as well as soil stack, vent pipe and chimney flashing, shall be applied in accordance with the asphalt shingle manufacturer’s printed instructions.</p>		X			Editorial.
RB266-22	<p>Add new text as follows: R905.3.6 Wind resistance of concrete and clay tile. <u>In regions where wind design is required in accordance with Figure R301.2.1.1, wind loads on concrete and clay tile shall be determined in accordance with Section 1504.3 of the International Building Code. In regions where wind design is not required in accordance with Figure R301.2.1.1, concrete and clay tiles shall be attached in accordance with this Sections R905.3.7 and R905.3.8.</u> R905.5.6 Wind resistance of mineral-surfaced roll roofing. <u>Mineral-surfaced roll roofing shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</u> R905.6.5 Wind resistance of slate shingles. <u>Slate shingles shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2). In regions where wind design is not required in accordance with Figure R301.2.1.1, slate shingles shall be attached in accordance with Section R905.6.6.</u> Revise as follows: R905.6.6 R905.6.5 Application. Minimum headlap for slate shingles shall be in accordance with Table R905.6.6 R905.6.5 . Slate shingles shall be secured to the roof with two fasteners per slate. Slate shingles shall be installed in accordance with this chapter and the manufacturer’s instructions. TABLE R905.6.6 R905.6.5 SLATE SHINGLE HEADLAP Portions of table not shown remain unchanged. Add new text as follows: R905.7.5 Wind resistance of wood shingles. <u>In regions where wind design is required in accordance with Figure R301.2.1.1,</u></p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>Wood shingles shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2). In regions where wind design is not required in accordance with Figure R301.2.1.1, wood shingles are permitted to be attached in accordance with Section R905.7.6.</u></p> <p>Revise as follows:</p> <p>R905.7.6 R905.7.5 Application. Wood shingles shall be installed in accordance with this chapter and the manufacturer’s instructions. Wood shingles shall be laid with a side lap not less than 1½ inches (38 mm) between joints in courses, and two joints shall not be in direct alignment in any three adjacent courses. Spacing between shingles shall be not less than ¼ inch to ⅜ inch (6.4 mm to 9.5 mm). Weather exposure for wood shingles shall not exceed those set in Table R905.7.6(1) R905.7.5(1). Fasteners for untreated (naturally durable) wood shingles shall be box nails in accordance with Table R905.7.6(2) R905.7.5(2). Nails shall be stainless steel Type 304 or 316 or hot-dipped galvanized with a coating weight of ASTM A153 Class D (1.0 oz/ft²). Alternatively, two 16-gage stainless steel Type 304 or 316 staples with crown widths 7/16 inch (11.1 mm) minimum, ¾ inch (19.1 mm) maximum, shall be used. Fasteners installed within 15 miles (24 km) of saltwater coastal areas shall be stainless steel Type 316. Fasteners for fire-retardant-treated shingles in accordance with Section R902 or pressure-impregnated-preservative-treated shingles of naturally durable wood in accordance with AWPA U1 shall be stainless steel Type 316. Fasteners shall have a minimum penetration into the sheathing of ¾ inch (19.1 mm). For sheathing less than ¾ inch in (19.1 mm) thickness, each fastener shall penetrate through the sheathing. Wood shingles shall be attached to the roof with two fasteners per shingle, positioned in accordance with the manufacturer’s installation instructions. Fastener packaging shall bear a <i>label</i> indicating the appropriate grade material or coating weight.</p> <p>TABLE R905.7.6(1) R905.7.5(1) WOOD SHINGLE WEATHER EXPOSURE AND ROOF SLOPE</p> <p>Portions of table not shown remain unchanged.</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>TABLE <u>R905.7.6(2)</u> R905.7.5(2) NAIL REQUIREMENTS FOR WOOD SHAKES AND WOOD SHINGLES Portions of table not shown remain unchanged. Add new text as follows: <u>R905.8.6 Wind resistance of wood shakes. In regions where wind design is required in accordance with Figure R301.2.1.1, Wood shakes shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2). In regions where wind design is not required in accordance with Figure R301.2.1.1, wood shakes are permitted to be attached in accordance with Section R905.8.7.</u> Revise as follows: <u>R905.8.7 R905.8.6 Application. Wood shakes shall be installed in accordance with this chapter and the manufacturer’s installation instructions. Wood shakes shall be laid with a side lap not less than 1½ inches (38 mm) between joints in adjacent courses. Spacing between shakes in the same course shall be ¾ inch to 5/8 inch (9.5 mm to 15.9 mm) including taper sawn shakes. Weather exposures for wood shakes shall not exceed those set in Table <u>R905.8.7</u> <u>R905.8.6</u>. Fasteners for untreated (naturally durable) wood shakes shall be box nails in accordance with Table <u>R905.7.6(2)</u> <u>R905.7.5(2)</u>. Nails shall be stainless steel Type 304, or Type 316 or hot-dipped with a coating weight of ASTM A153 Class D (1.0 oz/ft²). Alternatively, two 16-gage Type 304 or Type 316 stainless steel staples, with crown widths 7/16 inch (11.1 mm) minimum, ¾ inch (19.1 mm) maximum, shall be used. Fasteners installed within 15 miles (24 km) of saltwater coastal areas shall be stainless steel Type 316. Wood shakes shall be attached to the roof with two fasteners per shake positioned in accordance with the manufacturer’s installation instructions. Fasteners for fire-retardant-treated (as defined in Section R902) shakes or pressure-impregnated-preservative-treated shakes of <i>naturally durable wood</i> in accordance with AWPA U1 shall be stainless steel Type 316. Fasteners shall have a minimum penetration into the sheathing of ¾ inch (19.1 mm). Where the sheathing is less than ¾ inch (19.1 mm) thick, each fastener shall penetrate</u></p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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	<p>through the sheathing. Fastener packaging shall bear a <i>label</i> indicating the appropriate grade material or coating weight.</p> <p>TABLE R905.8.7 R905.8.6 WOOD SHAKE WEATHER EXPOSURE AND ROOF SLOPE</p> <p>Portions of table not shown remain unchanged.</p> <p>Add new text as follows:</p> <p>R905.9.4 Wind resistance of built-up roofs. Built-up roof coverings shall be tested in accordance with FM 4474, UL1897 or UL 580 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</p> <p>R905.10.5 Wind resistance of metal roof panels. Metal roof panels shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2). Metal roof panels applied to a solid or closely fitted deck shall be tested for wind resistance in accordance with FM 4474, UL 580, or UL 1897. Structural standing seam metal panel roof systems shall be tested for wind resistance in accordance with ASTM E1592 or FM 4474. Structural through-fastened metal panel roof systems shall be tested for wind resistance in accordance with ASTM E1592, FM 4474 or UL 580.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Metal roofs constructed of cold-formed steel shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 2210.1 of the International Building Code. 2. Metal roofs constructed of aluminum shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 2002.1 of the International Building Code. <p>R905.11.4 Wind resistance of modified bitumen roofing. Modified bitumen roofing shall be tested in accordance with FM 4474, UL1897 or UL 580 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</p> <p>R905.12.4 Wind resistance of thermoset single-ply roofing. Thermoset single-ply roofing shall be tested in accordance with FM 4474, UL1897 or UL 580 and installed to resist the</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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	<p><u>component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</u></p> <p>R905.13.4 Wind resistance of thermoplastic single-ply roofing. Thermoplastic single-ply roofing shall be tested in accordance with FM 4474, UL1897 or UL 580 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</p> <p>R905.14.4 Wind resistance of sprayed polyurethane foam roofing. Sprayed polyurethane foam roofing shall be tested in accordance with FM 4474, UL1897 or UL 580 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</p> <p>R905.15.4 Wind resistance of liquid-applied roofing. Liquid-applied roofing shall be tested in accordance with FM 4474, UL1897 or UL 580 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</p> <p>R905.17.7 Wind resistance of BIPV roof panels. BIPV roof panels shall be tested in accordance with UL 1897 UL 7103 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).</p>																
RB267-22	<p>Revise as follows:</p> <p>TABLE R905.3.7 CLAY AND CONCRETE TILE ATTACHMENT</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">SHEATHING</th> <th style="width: 33%;">ROOF SLOPE</th> <th style="width: 33%;">NUMBER OF FASTENERS</th> </tr> </thead> <tbody> <tr> <td>Solid without battens</td> <td align="center">All</td> <td align="center">One per tile</td> </tr> <tr> <td>Spaced or solid with battens and slope < 5:12</td> <td align="center"><u>Fasteners not required</u> slope < 5:12</td> <td align="center"><u>Fasteners not required</u></td> </tr> <tr> <td>Spaced sheathing without battens</td> <td align="center">5:12 ≤ slope < 12:12 12:12 ≤ slope < 24:12</td> <td align="center">One per tile/every other row One per tile</td> </tr> </tbody> </table>	SHEATHING	ROOF SLOPE	NUMBER OF FASTENERS	Solid without battens	All	One per tile	Spaced or solid with battens and slope < 5:12	<u>Fasteners not required</u> slope < 5:12	<u>Fasteners not required</u>	Spaced sheathing without battens	5:12 ≤ slope < 12:12 12:12 ≤ slope < 24:12	One per tile/every other row One per tile		X		Editorial.
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RB268-22	<p>Add new text as follows:</p> <p>R905.6.5 Wind resistance of slate shingles. Slate shingles shall be tested in accordance with ASTM D3161. Slate shingle packaging shall bear a label indicating compliance with ASTM D3161 and the required classification in Table R905.6.5.</p> <p>TABLE R905.6.5 CLASSIFICATION OF SLATE SHINGLES TESTED IN ACCORDANCE WITH ASTM D3161</p>		X		Clarification.												

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																										
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Sub Code:																																
	<table border="1"> <thead> <tr> <th>MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}, FROM FIGURE R301.2(2) (mph)</th> <th>MAXIMUM BASIC WIND SPEED, V_{base}, FROM TABLE R301.2.1.3 (mph)</th> <th>ASTM D3161 CLASSIFICATION</th> </tr> </thead> <tbody> <tr><td>110</td><td>85</td><td>A, D or F</td></tr> <tr><td>116</td><td>90</td><td>A, D or F</td></tr> <tr><td>129</td><td>100</td><td>A, D or F</td></tr> <tr><td>142</td><td>110</td><td>F</td></tr> <tr><td>155</td><td>120</td><td>F</td></tr> <tr><td>169</td><td>130</td><td>F</td></tr> <tr><td>181</td><td>140</td><td>F</td></tr> <tr><td>194</td><td>150</td><td>F</td></tr> </tbody> </table> <p align="center">For SI: 1 mph=0.447 m/s</p>	MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult} , FROM FIGURE R301.2(2) (mph)	MAXIMUM BASIC WIND SPEED, V_{base} , FROM TABLE R301.2.1.3 (mph)	ASTM D3161 CLASSIFICATION	110	85	A, D or F	116	90	A, D or F	129	100	A, D or F	142	110	F	155	120	F	169	130	F	181	140	F	194	150	F				
MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult} , FROM FIGURE R301.2(2) (mph)	MAXIMUM BASIC WIND SPEED, V_{base} , FROM TABLE R301.2.1.3 (mph)	ASTM D3161 CLASSIFICATION																														
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181	140	F																														
194	150	F																														
RB269-22	<p>Revise as follows:</p> <p>R905.7.1 Deck requirements. Wood shingles shall be installed on solid or spaced sheathing. Where spaced sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. <u>Where 1-inch by 4-inch (25 mm by 102 mm) spaced sheathing is installed at 10 inches (254 mm) or greater, additional 1-inch by 4-inch (25 mm by 102 mm) boards shall be installed between the sheathing boards.</u></p> <p><u>When wood shingles are installed over spaced sheathing and the underside of the shingles are exposed to the attic space the attic shall be ventilated in accordance with Sections R806.1, R806.2, R806.3 and R806.4. The shingles shall not be backed with materials that prevent the free movement of air on the interior side of the spaced sheathing.</u></p>		X			Clarification.																										
RB270-22	<p>Revise as follows:</p> <p>R905.7.5 Application. Wood shingles shall be installed in accordance with this chapter and the manufacturer’s instructions. Wood shingles shall be laid with a side lap not less than 1½ inches (38 mm) between joints in courses, and two joints shall not be in direct alignment in any three adjacent courses. Spacing between shingles shall be not less than ¼ inch to ⅜ inch (6.4 mm to 9.5 mm). Weather exposure for wood shingles shall not exceed those set in Table R905.7.5(1). Fasteners for untreated (naturally durable) wood shingles shall be box nails in accordance with Table R905.7.5(2). Nails shall be stainless steel Type 304 or 316 or hot-dipped galvanized with a coating weight of ASTM A153 Class D or ASTM A641 Class 3S (1.0 oz/ft²). Alternatively, two 16-gage stainless steel Type 304 or 316 staples with crown widths 7/16 inch (11.1 mm) minimum, ¾</p>		X			Editorial.																										

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>inch (19.1 mm) maximum, shall be used. Fasteners installed within 15 miles (24 km) of saltwater coastal areas shall be stainless steel Type 316. Fasteners for fire-retardant-treated shingles in accordance with Section R902 or pressure-impregnated-preservative-treated shingles of naturally durable wood in accordance with AWPA U1 shall be stainless steel Type 316.</p> <p>Fasteners shall have a minimum penetration into the sheathing of ³/₄ inch (19.1 mm). For sheathing less than ³/₄ inch in (19.1 mm) thickness, each fastener shall penetrate through the sheathing. Wood shingles shall be attached to the roof with two fasteners per shingle, positioned in accordance with the manufacturer’s installation instructions. Fastener packaging shall bear a <i>label</i> indicating the appropriate grade material or coating weight.</p>					
RB271-22	<p>2021 International Residential Code Revise as follows: R905.8.1 Deck requirements. Wood shakes shall be used only installed on solid or spaced sheathing. Where spaced sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. Where 1-inch by 4-inch (25 mm by 102 mm) spaced sheathing is installed at 10 inches (254 mm) on center, additional 1-inch by 4-inch (25 mm by 102 mm) boards shall be installed between the sheathing boards. <u>When wood shakes are installed over spaced sheathing and the underside of the shakes are exposed to the attic space, the attic shall be ventilated in accordance with Sections R806.1, R806.2, R806.3 and R806.4. The shakes shall not be backed with materials that will occupy the required air gap space and prevent the free movement of air on the interior side of the spaced sheathing.</u></p>		X			Clarification.
RB272-22	<p>Revise as follows: R905.8.6 Application. Wood shakes shall be installed in accordance with this chapter and the manufacturer’s installation instructions. Wood shakes shall be laid with a side lap not less than 1½ inches (38 mm) between joints in adjacent courses. Spacing between shakes in the same course shall be ³/₈ inch to ⁵/₈ inch (9.5 mm to 15.9 mm) including taper sawn shakes. Weather exposures for wood shakes shall not exceed</p>		X			Editorial.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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Sub Code:																	
	those set in Table R905.8.6. Fasteners for untreated (naturally durable) wood shakes shall be box nails in accordance with Table R905.7.5(2). Nails shall be stainless steel Type 304, or Type 316 or hot-dipped with a coating weight of ASTM A153 Class D or <u>ASTM A641 Class 3S</u> (1.0 oz/ft ²). Alternatively, two 16-gage Type 304 or Type 316 stainless steel staples, with crown widths ⁷ / ₁₆ inch (11.1 mm) minimum, ³ / ₄ inch (19.1 mm) maximum, shall be used. Fasteners installed within 15 miles (24 km) of saltwater coastal areas shall be stainless steel Type 316. Wood shakes shall be attached to the roof with two fasteners per shake positioned in accordance with the manufacturer’s installation instructions. Fasteners for fire-retardant-treated (as defined in Section R902) shakes or pressure-impregnated- preservative-treated shakes of <i>naturally durable wood</i> in accordance with AWPA U1 shall be stainless steel Type 316. Fasteners shall have a minimum penetration into the sheathing of ³ / ₄ inch (19.1 mm). Where the sheathing is less than ³ / ₄ inch (19.1 mm) thick, each fastener shall penetrate through the sheathing. Fastener packaging shall bear a <i>label</i> indicating the appropriate grade material or coating weight.																
RB274-22	<p>Revise as follows: R905.12 Thermoset single <u>Single-ply roofing</u>. The installation of thermoset single-ply roofing <u>single-ply membrane roof coverings</u> shall comply with the provisions of this section. R905.12.1 Slope. Thermoset single <u>Single-ply membrane roofs roof coverings</u> shall have a design slope of not less than¹/₄ unit vertical in 12 units horizontal (2-percent slope) for drainage. R905.12.2 Material standards. Thermoset single <u>Single-ply membrane roof coverings</u> shall comply with ASTM D4637 or ASTM D5019 <u>the material standards in Table R905.12.</u></p> <p>Add new text as follows: TABLE R905.12 SINGLE-PLY ROOFING MATERIAL STANDARDS</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>MATERIAL STANDARD</th> </tr> </thead> <tbody> <tr> <td>Chlorosulfonated polyethylene (CSPE) or polyisobutylene (PIB)</td> <td>ASTM D5019</td> </tr> <tr> <td>Ethylene propylene diene monomer (EPDM)</td> <td>ASTM D4637</td> </tr> <tr> <td>Ketone Ethylene Ester (KEE)</td> <td>ASTM D6734</td> </tr> <tr> <td>Polyvinyl chloride (PVC) or (PVC/KEE)</td> <td>ASTM D4434</td> </tr> <tr> <td>Thermoplastic polyolefin (TPO)</td> <td>ASTM D6678</td> </tr> </tbody> </table> <p>Revise as follows:</p>	MATERIAL	MATERIAL STANDARD	Chlorosulfonated polyethylene (CSPE) or polyisobutylene (PIB)	ASTM D5019	Ethylene propylene diene monomer (EPDM)	ASTM D4637	Ketone Ethylene Ester (KEE)	ASTM D6734	Polyvinyl chloride (PVC) or (PVC/KEE)	ASTM D4434	Thermoplastic polyolefin (TPO)	ASTM D6678		X		Editorial.
MATERIAL	MATERIAL STANDARD																
Chlorosulfonated polyethylene (CSPE) or polyisobutylene (PIB)	ASTM D5019																
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	<p>R905.12.3 Application. Thermoset single <i>Single-ply membrane roof roofs coverings</i> shall be installed in accordance with this chapter and the manufacturer's <u>installation</u> instructions.</p> <p>R905.13 Thermoplastic single ply roofing. The installation of thermoplastic single ply roofing shall comply with the provisions of this section.</p> <p>R905.13.1 Slope. Thermoplastic <i>single-ply membrane roofs</i> shall have a design slope of not less than ¹/₄ unit vertical in 12 units horizontal (2-percent slope).</p> <p>R905.13.2 Material standards. Thermoplastic single ply roof coverings shall comply with ASTM D4434, D6754 or D6878.</p> <p>R905.13.3 Application. Thermoplastic single ply roofs shall be installed in accordance with this chapter and the manufacturer's instructions.</p>																									
RB277-22	<p>Revise as follows:</p> <p>TABLE R906.2 MATERIAL STANDARDS FOR ROOF INSULATION</p> <table border="1"> <tr><td>Cellular glass board</td><td>ASTM C552 or ASTM C1902</td></tr> <tr><td>Composite boards</td><td>ASTM C1289, Type III, IV, V or VI</td></tr> <tr><td>Expanded polystyrene</td><td>ASTM C578</td></tr> <tr><td>Extruded polystyrene board</td><td>ASTM C578</td></tr> <tr><td>Fiber-reinforced gypsum board</td><td>ASTM C1278</td></tr> <tr><td>Glass-faced gypsum board</td><td>ASTM C1177</td></tr> <tr><td>Mineral wool board</td><td>ASTM C726</td></tr> <tr><td>Perlite board</td><td>ASTM C728</td></tr> <tr><td>Polyisocyanurate board</td><td>ASTM C1289, Type I or II</td></tr> <tr><td>Wood fiberboard</td><td>ASTM C208</td></tr> </table>	Cellular glass board	ASTM C552 or ASTM C1902	Composite boards	ASTM C1289, Type III, IV, V or VI	Expanded polystyrene	ASTM C578	Extruded polystyrene board	ASTM C578	Fiber-reinforced gypsum board	ASTM C1278	Glass-faced gypsum board	ASTM C1177	Mineral wool board	ASTM C726	Perlite board	ASTM C728	Polyisocyanurate board	ASTM C1289, Type I or II	Wood fiberboard	ASTM C208	X			Reduce insulation density for cellular glass to reduce cost and improve thermal performance.	Improved thermal resistance.
Cellular glass board	ASTM C552 or ASTM C1902																									
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Wood fiberboard	ASTM C208																									
RB280-22	<p>Add new text as follows:</p> <p><u>SECTION R908 ROOF COATINGS</u></p> <p><u>R908.1 General.</u> The installation of a <i>roof coating</i> on a <i>roof covering</i> shall comply with the requirements of Section R902, R904 and this section. <i>Roof coatings</i> shall be installed in accordance with the manufacturer's installation instructions.</p> <p><u>R908.2 Material standards.</u> <i>Roof coating</i> materials shall comply with one of the standards in Table R908.2.</p> <p><u>TABLE R908.2 ROOF COATING MATERIAL STANDARDS</u></p> <p>Portions of table not shown remain unchanged.</p>		X			Clarification.																				
RB281-22	<p>Revise as follows:</p> <p>R908.3 Roof replacement. <i>Roof replacement</i> shall include the removal of existing layers of roof coverings down to the <i>roof deck</i>.</p> <p>Exception <u>Exceptions:</u></p>	X			For existing roofs with one layer of self-adhered membrane underlayment, this proposal	Material guidance and evaluation for roof replacement.																				

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		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>1. Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck and the existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section R905 where permitted by the roof covering manufacturer and self-adhered new ice barrier underlayment manufacturer.</u></p> <p><u>2. Where the existing roof includes a self-adhered underlayment and the existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing, the existing self-adhered underlayment shall be permitted to remain in place and covered with an underlayment complying with Table R905.1.1(1), Table R905.1.1(2), and Table R905.1.1(3).</u></p> <p><u>3. Where the existing roof includes one layer of new self-adhered underlayment and the existing layer cannot be removed without damaging the roof deck, a second layer of self-adhered underlayment is permitted to be installed over the existing self-adhered underlayment provided the following conditions are met:</u></p> <p><u>3.1. It is permitted by the roof covering manufacturer and self-adhered underlayment manufacturer.</u></p> <p><u>3.2. The existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing.</u></p> <p><u>3.3. The second layer of self-adhered underlayment is installed such that buildup of material at walls, valleys, roof edges, end laps, and side laps does not exceed two layers.</u></p>				would reduce the cost of construction by permitting the existing layer to remain in place.	
RB283-22	<p>Revise as follows: R1001.11 Fireplace clearance. Wood beams, joists, studs and other <i>combustible material</i> shall have a clearance of not less than 2 inches (51 mm) from the front faces and sides of masonry fireplaces and not less than 4 inches (102 mm) from the back faces of masonry fireplaces. The airspace shall not be filled, except for noncombustible insulation material or to provide fireblocking in accordance with Section R1001.12.</p> <p>Exceptions:</p>		X			Add design option.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>1. Masonry fireplaces <i>listed</i> and <i>labeled</i> for use in contact with combustibles in accordance with UL 127 and installed in accordance with the manufacturer’s instructions are permitted to have <i>combustible material</i> in contact with their exterior surfaces.</p> <p>2. Where masonry fireplaces are part of masonry or concrete walls, <i>combustible materials</i> shall not be in contact with the masonry or concrete walls less than 12 inches (306 mm) from the inside surface of the nearest firebox lining.</p> <p>3. Exposed combustible <i>trim</i> and the edges of sheathing materials such as wood siding, flooring and gypsum board shall be permitted to abut the masonry fireplace sidewalls and hearth extension in accordance with Figure R1001.11, provided such combustible <i>trim</i> or sheathing is not less than 12 inches (305 mm) from the inside surface of the nearest firebox lining.</p> <p>4. Exposed combustible mantels or <i>trim</i> is permitted to be placed directly on the masonry fireplace front surrounding the fireplace opening providing such <i>combustible materials</i> are not placed within 6 inches (152 mm) of a fireplace opening. <i>Combustible material</i> within 12 inches (306 mm) of the fireplace opening shall not project more than $\frac{1}{8}$ inch (3 mm) for each 1-inch (25 mm) distance from such an opening.</p>					
RB284-22	<p>Revise as follows:</p> <p>R1001.11 Fireplace clearance. Wood beams, joists, studs and other <i>combustible material</i> shall have a clearance of not less than 2 inches (51 mm) from the front faces and sides of masonry fireplaces and not less than 4 inches (102 mm) from the back faces of masonry fireplaces. The airspace shall not be filled, except to provide fireblocking in accordance with Section R1001.12.</p> <p>Exceptions:</p> <p>1. Masonry fireplaces <i>listed</i> and <i>labeled</i> for use in contact with combustibles in accordance with UL 127 and installed in accordance with the manufacturer’s instructions are permitted to have <i>combustible material</i> in contact with their exterior surfaces.</p> <p>2. Where masonry fireplaces are part of masonry or concrete walls, <i>combustible materials</i> shall not be in contact with the</p>		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>masonry or concrete walls less than 12 inches (306 mm) from the inside surface of the nearest firebox lining.</p> <p>3. Exposed combustible <i>trim</i> and the edges of sheathing materials such as wood siding, flooring and gypsum board shall be permitted to abut the masonry fireplace sidewalls and hearth extension in accordance with Figure R1001.11, provided such combustible <i>trim</i> or sheathing is not less than 12 inches (305 mm) <u>8 inches (203 mm)</u> from the inside surface of the nearest firebox lining. <u>Where the fireplace opening is 6 square feet (0.6 m2) or larger such combustible or sheathing shall be permitted to abut the masonry fireplace sidewalls and hearth extension provided such combustible or sheathing is not less than 12 inches (305 mm) from the inside surface of the nearest firebox lining.</u></p> <p>4. Exposed combustible mantels or <i>trim</i> is permitted to be placed directly on the masonry fireplace front surrounding the fireplace opening providing such <i>combustible materials</i> are not placed within 6 inches (152 mm) of a fireplace opening. <i>Combustible material</i> within 12 inches (306 mm) of the fireplace opening shall not project more than¹/₈ inch (3 mm) for each 1-inch (25 mm) distance from such an opening.</p>					
RB287-22	<p>Revise as follows:</p> <p>R1003.18 Chimney clearances. Any portion of a <i>masonry chimney</i> located in the interior of the building or within the exterior wall of the building shall have a minimum airspace clearance to combustibles of 2 inches (51 mm). Chimneys located entirely outside the exterior walls of the building, including chimneys that pass through the soffit or cornice, shall have a minimum airspace clearance of 1 inch (25 mm). The airspace shall not be filled, except to provide fire blocking in accordance with Section R1003.19.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Masonry chimneys equipped with a chimney lining system <i>listed and labeled</i> for use in chimneys in contact with combustibles in accordance with UL 1777 and installed in accordance with the manufacturer’s instructions are permitted to have <i>combustible material</i> in contact with their exterior surfaces. Where masonry chimneys are constructed as part of masonry or concrete walls, <i>combustible materials</i> shall not 		X			Clarification.

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>be in contact with the masonry or concrete wall less than 12 inches (305 mm) from the inside surface of the nearest flue lining.</p> <p>3. Exposed combustible trim and the edges of sheathing materials, such as wood siding and flooring, Combustible materials shall be permitted to abut the <i>masonry chimney</i> side walls, in accordance with Figure R1003.18, provided such combustible trim or sheathing material is not less than 8 inches (203 mm) from the inside surface of the nearest flue lining.</p>					
RB288-22	<p>Revise as follows:</p> <p>R1003.18 Chimney clearances. Any portion of a <i>masonry chimney</i> located in the interior of the building or within the exterior wall of the building shall have a minimum airspace clearance to combustibles of 2 inches (51 mm). Chimneys located entirely outside the exterior walls of the building, including chimneys that pass through the soffit or cornice, shall have a minimum airspace clearance of 1 inch (25 mm). The airspace shall not be filled, except to provide fire blocking in accordance with Section R1003.19.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Masonry chimneys equipped with a chimney lining system <i>listed and labeled</i> for use in chimneys in contact with combustibles in accordance with UL 1777 and installed in accordance with the manufacturer’s instructions are permitted to have <i>combustible material</i> in contact with their exterior surfaces. Where masonry chimneys are constructed as part of masonry or concrete walls, <i>combustible materials</i> shall not be in contact with the masonry or concrete wall less than 12 inches (305 mm) <u>8 inches (203 mm)</u> from the inside surface of the nearest flue lining. Exposed combustible <i>trim</i> and the edges of sheathing materials, such as wood siding and flooring, shall be permitted to abut the <i>masonry chimney</i> side walls, in accordance with Figure R1003.18, provided such combustible trim or sheathing is not less than 8 inches (203 mm) from the inside surface of the nearest flue lining. 		X		Clarification	

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
RB289-22	<p>Revise as follows: R1004.4 Unvented gas log heaters. An unvented gas log heater <u>or a fireplace insert</u> shall not be installed in a factory-built fireplace unless the fireplace system has been specifically tested, <i>listed</i> and <i>labeled</i> for such use in accordance with UL 127.</p>		X			Increased safety.
RB293-22	<p>Revise as follows: AF103.3 Soil-gas-retarder. A minimum 6 mil (0.15 mm) [or 3 mil (0.075 mm) cross-laminated] polyethylene <u>ASTM E1745 Class A or equivalent complying with Section R506.2.3</u> flexible sheeting material shall be placed on top of the gas-permeable layer prior to casting the slab or placing the floor assembly to serve as a soil-gas-retarder by bridging any cracks that develop in the slab or floor assembly, and to prevent concrete from entering the void spaces in the aggregate base material. The sheeting shall cover the entire floor area with separate sections of sheeting lapped not less than 12 inches (305 mm). The sheeting shall fit closely around any pipe, wire or other penetrations of the material. Punctures or tears in the material shall be sealed or covered with additional sheeting.</p>		X			Clarification.
RB295-22	<p>Revise as follows: AF103.2 Subfloor preparation. A layer of gas-permeable material shall be placed under all concrete slabs and other floor systems that directly contact the ground and are within the walls of the living spaces of the building, to facilitate future installation of a subslab depressurization system, if needed. <u>Exception: A sand base course is not required under geotextile drainage matting where the concrete slab is installed on well-drained or sand-gravel mixture soil classified as Group 1 according to the United Soil Classification in accordance with Table R405.1</u> The gas-permeable layer shall consist of one of the following: 1. A uniform layer of clean aggregate, not less than 4 inches (102 mm) thick. The aggregate shall consist of material that will pass through a 2-inch (51 mm) sieve and be retained by a 1/4-inch (6.4 mm) sieve. 2. A uniform layer of sand (native or fill), not less than 4 inches (102 mm) thick, overlain by a layer or strips of geotextile drainage matting designed to allow the lateral flow of soil gases.</p>	X			Eliminated requirement for a sand base layer where appropriate soils exist.	Additional options for subfloor preparation.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	3. Other materials, systems or floor designs with demonstrated capability to permit depressurization across the entire subfloor area.					
RB296-22	<p>SECTION AJ108 RENOVATIONS Revise as follows: AJ108.1 Materials and methods. The work shall comply with the materials and methods requirements of this code. <u>For the purpose of compliance with Chapter 11 of this code, a renovation shall be included within the scope of an alteration as defined in Chapter 11.</u></p>		X			Editorial.
RB297-22	<p>Revise as follows: APPENDIX AJ EXISTING BUILDINGS AND STRUCTURES SECTION AJ101 PURPOSE AND INTENT Revise as follows: AJ101.1 General. The purpose of these provisions is to encourage the continued use or reuse of legally existing buildings and structures. These provisions are intended to permit work in existing buildings that is consistent with the purpose of this code. Compliance with these provisions shall be deemed to meet the requirements of this code. <u>Structural elements and systems shall comply with Section R102.7.1 and Chapter 3 through Chapter 10 of the International Residential Code provisions of this Appendix.</u> SECTION AJ102 COMPLIANCE Revise as follows: AJ102.1 General. Regardless of the category of work being performed, the work shall not cause the <u>building</u> or structure to become unsafe or adversely affect the performance of the building; shall not cause an existing mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded; and unless expressly permitted by these provisions, shall not make the building any less compliant with this code or to any previously <i>approved</i> alternative arrangements than it was before the work was undertaken. Add new text as follows: AJ102.2 Structural. <u>Structural elements and systems that are altered, repaired, or replaced shall comply with Section R102.7.1 and the structural provisions of Chapter 3 through Chapter 10 of the International Residential Code Appendix. The work performed shall not cause the structure to become less</u></p>		X			Editorial.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>compliant with the International Residential Code than it was before the work was undertaken.</u></p> <p>AJ102.4 AJ102.2.1 Structural Design Loads. The minimum design loads for the structure shall be the loads applicable at the time the building was constructed. The minimum design loads for new structural components shall comply with the International Residential Code. Structural elements that are uncovered during the course of the <i>alteration</i> and that are found to be unsafe shall be repaired in accordance with Section R102.7.1.</p> <p>SECTION AJ104 EVALUATION OF AN EXISTING BUILDING Revise as follows: AJ104.1 General. The <i>building official</i> shall have the authority to require an existing building to be investigated and evaluated by a <i>registered design professional</i> in the case of proposed reconstruction of any portion of a building. The evaluation shall determine the existence of any potential nonconformities to these provisions and Section R102.7.1 and structural provisions of this Appendix the <i>International Residential Code</i>, and shall provide a basis for determining the impact of the proposed changes on the performance of the building. The evaluation shall use the following sources of information, as applicable:</p> <ol style="list-style-type: none"> 1. Available documentation of the existing building. <ol style="list-style-type: none"> 1.1. Field surveys. 1.2. Tests (nondestructive and destructive). 1.3. Laboratory analysis. <p>Exception: Detached one- or two-family dwellings that are not irregular buildings under Section R301.2.2.6 and are not undergoing an extensive reconstruction shall not be required to be evaluated.</p> <p>SECTION AJ107 REPAIRS Add new text as follows: AJ107.4 Structural. Repaired structural elements and systems shall comply with Section R102.7.1 and the structural provisions of this Appendix Chapter 3 through Chapter 10 of the <i>International Residential Code</i>.</p> <p>SECTION AJ108 RENOVATIONS Revise as follows: AJ108.4 Structural. Structural elements and systems modified by the renovation shall comply with Section R102.7.1 and the structural provisions of this Appendix Chapter 3 through Chapter 10 of the <i>International Residential Code</i>. Unreinforced masonry buildings located in Seismic Design Category D₂ or E shall have parapet bracing</p>					

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>and wall anchors installed at the roofline whenever a <i>reroofing permit</i> is issued. Such parapet bracing and wall anchors shall be of an <i>approved design</i>.</p> <p>SECTION AJ109 ALTERATIONS Revise as follows: AJ109.4 Structural. Altered structural elements and systems shall comply with Section R102.7.1 and the structural provisions of this AppendixChapter 3 through Chapter 10 of the <i>International Residential Code</i>. The minimum design loads for the structure shall be the loads applicable at the time the building was constructed, provided that a dangerous condition is not created. Structural elements that are uncovered during the course of the <i>alteration</i> and that are found to be unsound or dangerous shall be made to comply with the applicable requirements of this code.</p> <p>SECTION AJ110 RECONSTRUCTION Add new text as follows: AJ110.5 Structural. Reconstructed structural elements and systems shall comply with Section R102.7.1 and the structural provisions of this AppendixChapter 3 through Chapter 10 of the <i>International Residential Code</i> for new construction.</p>					
RB298-22	<p>Revise as follows: AJ102.4.3 Replacement windows for emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings, replacement windows shall be exempt from Sections R310.2 and R310.4.4 provided that the replacement window meets the following conditions:</p> <ol style="list-style-type: none"> 1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window. 2. Where the replacement window is not part of a change of occupancy. 3. Window opening control devices complying with F409—2017 shall be permitted for use on windows required to provide emergency escape and rescue openings. <p>Window opening control devices and fall prevention devices complying with ASTM F2090 shall be permitted for use on windows serving as required emergency escape and rescue openings.</p>		X		Clarification.	

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>AJ102.4.3.1 Control devices. <u>Window opening control devices or fall prevention devices complying with ASTM F2090 shall be permitted for use on windows required to provide emergency escape and rescue openings. Emergency escape and rescue openings with window opening control devices or fall prevention devices complying with ASTM F2090, After operation to release the control device allowing the window to fully open, the control device shall not reduce the net clear opening area of the window unit. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.</u></p>					
RB299-22	<p>Add new text as follows: AJ110.5 Exterior Wall Coverings. <u>Exterior wall coverings shall comply with the requirements of Chapter 7 of this code. Exterior wall coverings Insulated Vinyl Siding, Polypropylene Siding, and Vinyl Siding shall be attached to a nailable substrate or other substrate suitable for mechanical fasteners.</u></p>		X			Clarification.
RB302-22	<p>Add new text as follows: AR103.1.1 Flood hazard areas. <u>In flood hazard areas established in Table R301.2, buildings using light straw-clay infill shall comply with the flood damage-resistant materials meet the requirements of Section R322.1.8.</u></p>		X			Clarification.
RB304-22	<p>Add new text as follows: AS101.3 Flood hazard areas. <u>In flood hazard areas established in Table R301.2, buildings using strawbale wall systems shall meet the requirements of Section R322.</u></p>		X			Clarification.
RB306-22	<p>Revise as follows: AS104.4.2 Lath and mesh for plaster. The surface of the <i>straw bales</i> functions as lath, and other lath or <i>mesh</i> shall not be required, except as required for out-of-plane <u>load</u> resistance by Table AS105.4 or for structural walls by Tables AS106.12 and AS106.13(1). AS104.4.6.1 General. Lime <i>plaster</i> is any <i>plaster</i> with a binder that is composed of calcium hydroxide (CaOH) ($Ca(OH)_2$) including Type N or S hydrated lime, hydraulic lime, natural hydraulic lime or slaked quicklime. Hydrated lime shall comply with ASTM C206. Hydraulic lime shall comply with ASTM C1707. Natural hydraulic lime shall comply with ASTM C141 and CEN EN 459. Quicklime shall comply with ASTM C5. AS104.4.6.3 On structural walls. Lime <i>plaster</i> on <i>strawbale</i> structural walls in accordance with Table AS106.12 or AS106.13(1) shall use hydraulic or natural hydraulic lime.</p>		X			Clarification.

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CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p><u>Exception:</u> A non-hydraulic lime plaster demonstrating the minimum compressive strength in accordance with Section AS106.6.1 and Table AS106.6.1.</p> <p>AS105.3.1 Exterior sill plate flashing. Exterior sill plates shall receive flashing across the <u>joint between the sill plate to and the slab or foundation joints.</u></p> <p>AS105.4.1 Determination of out-of-plane loading. Out-of-plane loading for the use of Table AS105.4 shall be in terms of the ultimate design wind speed and seismic design category as determined in accordance with Sections R301.2.1 and R301.2.2<u>respectively.</u> An <u>approved</u> engineered design <u>for out-of-plane load resistance</u> in accordance with Section R301.2.1 shall be required where<u>when</u> the building is located in a special wind region or where wind design is required in accordance with Figure R301.2(2) and Section R301.2.1.1, respectively.</p> <p>TABLE AS105.4 OUT-OF-PLANE <u>LOAD</u> RESISTANCE METHODS AND UNRESTRAINED WALL DIMENSION LIMITS</p> <p>Portions of table not shown remain unchanged.</p> <p>AS105.6.1 Water-resistant <u>Water-resistive</u> barriers and vapor permeance ratings. Plastered bale walls shall be constructed without any membrane barrier between <i>straw</i> and <i>plaster</i> to facilitate transpiration of moisture from the <i>bales</i>, and to secure a structural bond between <i>straw</i> and <i>plaster</i>, except as permitted or required elsewhere in this appendix. Where a water-resistant <u>water-resistive</u> barrier is placed behind an exterior finish, it shall have a vapor permeance rating of not less than 5 perms, except as permitted or required elsewhere in this appendix.</p> <p>AS105.6.2 Vapor <u>Interior vapor</u> retarders. Wall <i>finishes</i> shall have an equivalent vapor permeance rating of a Class III vapor retarder on the interior side of exterior <i>strawbale walls</i> in Climate Zones 5, 6, 7, 8 and Marine 4, as defined in Chapter 11. Bale <u>Bales</u> walls enclosing showers or steam rooms shall be protected on the interior side by a Class I or Class II vapor retarder.</p> <p>AS105.6.3 Penetrations in exterior strawbale walls. Penetrations in exterior <i>strawbale walls</i> shall be sealed with an <i>approved</i> sealant or gasket on the exterior side of the wall in all climate zones, and <u>Penetrations, and joints at the floor and ceiling shall be sealed</u> on the interior side of the wall in Climate Zones 5, 6, 7, 8 and Marine 4, as defined in Chapter 11.</p>					
RB307-22	<p>Revise as follows:</p> <p>AS106.6.1 Compressive strength. For plaster on <i>strawbale</i> structural walls, the <i>building official</i> is authorized to require a 2-inch (51mm) cube test conforming to ASTM C109 to demonstrate a minimum compressive strength in accordance with Table AS106.6.1. <u>For natural</u></p>		X			Clarification.

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Sub Code:						
	<p><u>hydraulic lime (NHL) plasters, the compressive strength in the NHL manufacturer's specifications is permitted to be used to satisfy the requirements in Table AS106.6.1, when the plaster mix used for the project is identical to that in the manufacturer's specifications.</u></p>					
RB308-22	<p>Revise as follows:</p> <p>AU105.3.4.2 Horizontal reinforcing. Two-inch by 2-inch (51 mm by 51 mm) 14-gage galvanized steel mesh shall be embedded 4 inches (102 mm) in the <i>cob</i> above the rough opening and below the rough opening for windows, and shall extend 12 inches (305 mm) beyond the sides of the opening. Walls below rough window openings greater than 4 feet 6 inches (1372 mm) in height shall be provided with additional horizontal reinforcing at midheight.</p> <p>AU106.6.1 Demonstration of compressive strength. The compressive strength of the <i>cob</i> mix to be used in structural walls and <i>nonstructural walls</i> as required in Section AU106.6 shall be demonstrated to the building official before the placement of <i>cob</i> onto walls, with compressive strength tests and an associated report by an <i>approved</i> laboratory or with an <i>approved on-site</i> test as follows:</p> <ol style="list-style-type: none"> 1. Five samples of the proposed <i>cob</i> mix shall be placed moist to completely fill a 4-inch by 4-inch by 4-inch<u>8-inch</u> (102 mm by 102 mm by 102 <u>203</u> mm) form and dried to ambient moisture conditions. 2. Samples shall not be oven dried. 3. Any opposite <u>The 4-inch by 4-inch (102 mm by 102 mm)</u> faces shall be faced <u>capped</u> with plaster of paris if needed to achieve smooth, parallel faces, after which the sample shall reach ambient moisture conditions before testing. 4. <u>Samples shall be constructed, dried, and tested with the long dimension vertical.</u> 5. 4- The horizontal cross section of the dried sample as tested, and the maximum applied load at failure shall be used to calculate the sample's compressive strength. 6. 5- The fourth-lowest value shall be used to determine the mix's compressive strength. <p>AU106.8 Bearing capacity. The allowable bearing capacity for <i>cob load-bearing walls</i> supporting vertical roof and/or ceiling loads imposed in accordance with Section R301 shall <u>not exceed 2200 plf and shall be determined by Equation AU-2. Use of bearing capacities determined with Equation AU-2 exceeding</u></p>			X	Minimal.	Adjust for lab test results.

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Sub Code:						
	<p><u>2200 plf requires an approved design prepared by a registered design professional that accounts for buckling.</u></p> <p>444 $(C \times T_{\min} \times 12)/3 - (H \times T_{\text{avg}}/12 \times D)$ (Equation AU-2) BC = Allowable bearing capacity of wall (in pounds per lineal foot of wall). C = Compressive strength (in psi) as determined in accordance with Section AU106.6. Tmin = Thickness of wall (in feet inches) at its minimum. H = Height of cob portion of wall (in feet). Tavg = Average thickness of wall (in feet inches). D = Density of cob = 110 (in pounds per cubic foot), unless a lesser value at equilibrium moisture content is demonstrated.</p>					
RB309-22	<p>Revise as follows:</p> <p>AU103.8 Drying holes. Where holes to facilitate drying are used, such holes shall be permitted to be of any depth and shall not exceed exceeding 3/4 inch (19 mm) in diameter on the face of cob walls. Drying holes shall not be spaced closer than 10 hole-diameters, and. Drying holes shall not be placed in braced wall panels. The design load on load-bearing walls with drying holes shall not exceed 90 percent of the allowable bearing capacity as determined in accordance with Section AU106.8. Drying holes shall be filled with cob before final inspection.</p> <p>AU104.1.2 Exterior wall finishes. Where installed, exterior wall <i>finishes</i> shall be <i>plasters</i> in accordance with Section AU104.4, nonplaster exterior wall coverings in accordance with Section R703, or other <i>finish</i> systems in accordance with the following:</p> <ol style="list-style-type: none"> 1. Specifications and details of the <i>finish</i> system's means of attachment to the wall or its independent support, and <u>of its</u> means of draining or evaporating water that penetrates the exterior <i>finish</i>, shall be provided <u>approved</u>. 2. The vapor permeance of the combination of <i>finish</i> materials shall be 5 perms or greater to allow the transpiration of water vapor from the wall. 3. <i>Finish</i> systems with weights greater than 10 pounds per square foot (48.9 kg/m) and less than or equal to 20 pounds per square foot (97.8 kg/m) of wall area shall require that the minimum total length of <u>cob braced wall panels</u> in Table AU106.11(3) be multiplied by a factor of 1.2. 		X		Clarification.	

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		Decrease	Neutral	Increase		
Sub Code:						
	<p>4. <i>Finish</i> systems with weights greater than 20 pounds per square foot (97.8 kg/m) of wall area shall require an engineered design.</p> <p>AU104.4 Plaster. <i>Plaster</i> applied to <i>cob</i> walls shall be any type described in this section. <i>Plaster</i> thickness shall not exceed 3 inches (76 mm) on each face except where <u>with</u> an <i>approved</i> engineered design is provided.</p> <p>AU104.4.1 Plaster and membranes. <i>Plaster</i> shall be applied directly to <i>cob</i> walls to facilitate transpiration of moisture from the walls and to secure a mechanical bond between the <i>plaster</i> and the <i>cob</i>, and shall comply with Section AU105.4.1. A membrane shall not be located between the <i>cob</i> wall and the <i>plaster</i>.</p> <p>AU105.2 Building limitations and requirements for cob wall construction. <i>Cob</i> walls shall be subject to the following limitations and requirements:</p> <ol style="list-style-type: none"> Number of stories: not more than one. Building height: not more than 20 feet (6096 mm). <i>Seismic design categories</i>: limited to use in <i>Seismic Design Categories</i> A, B and C, except where <u>with</u> an <i>approved</i> engineered design is provided. Wall height: in accordance with Table AU105.3, and with Table AU106.11(1) for <i>braced wall panels</i>. Wall thickness, excluding <i>finish</i>, shall be not less than 10 inches (254 mm), not greater than 24 inches (610 mm) at the top two-thirds, not limited at the bottom third and, for structural walls, shall comply with Section AU106.2, Item 2. Wall taper is permitted in accordance with Section AU106.5, Item 1. Interior <i>cob</i> walls shall require an <i>approved</i> engineered design that accounts for the seismic load of the interior <i>cob</i> walls, except in <i>Seismic Design Category</i> A for walls with a height to thickness ratio less than or equal to 6. <p>TABLE AU105.3 OUT-OF-PLANE RESISTANCE METHODS AND UNRESTRAINED WALL HEIGHT LIMITS</p> <p>Portions of table not shown remain unchanged.</p> <ol style="list-style-type: none"> Bond beams or other horizontal restraints are capable of separating permitted to divide a wall into more than one unrestrained wall height with an <i>approved</i> engineered design. 					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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	<p><u>h.</u> For curved walls with an arc length (ARC_c) to radius(R_c) ratio of 1.5:1 or greater, the H/T factor shall be increased by 1, and the absolute height limit by 1 foot. See Section AU106.11.3.</p> <p>AU105.4.1 Water-resistant Water-resistive barriers and vapor permeance. Cob walls shall be constructed without a membrane barrier between the cob wall and plaster to facilitate transpiration of water vapor from the wall, and to secure a mechanical bond between the cob and plaster, except as otherwise required elsewhere in this appendix. Where a water-resistant <u>water-resistive</u> barrier is placed behind an exterior <i>finish</i>, it shall be considered part of the <i>finish</i> system and shall comply with Item 2 of Section AU104.1.2 for the combined vapor permeance rating.</p> <p>AU105.4.2 Horizontal surfaces. <i>Cob</i> walls and other <i>cob</i> elements shall be provided with a water-resistant <u>water-resistive</u> barrier at weather-exposed horizontal surfaces. The water-resistant <u>water-resistive</u> barrier shall be of a material and installation that will prevent erosion and prevent water from entering the wall system. Horizontal surfaces, including exterior window sills, sills at exterior niches and exterior buttresses, shall be sloped not less than 1 unit vertical in 12 units horizontal to drain away from <i>cob</i> walls or other <i>cob</i> elements.</p> <p>AU105.4.5 Installation of windows and doors. Windows and doors shall be installed in accordance with the manufacturer’s instructions to a wooden frame <u>buck</u> of not less than nominal 2-inch by 4-inch (51 mm by 102 mm) wood members. <u>The installation of windows and doors and their bucks shall prevent the passage of air and water into or through the wall system.</u> anchored into the <i>cob</i> wall with 16d galvanized nails half-driven at a maximum 6-inch (152 mm) spacing, with the protruding half embedded in the <i>cob</i>. The wood frame shall be embedded not less than 1½ inches (38 mm) in the <i>cob</i> and shall be set in from each face of the wall not less than 3 inches (76 mm). Alternative window and door installation methods shall be capable of resisting the wind loads in Table R301.2.1(1). Windows and doors in <i>cob</i> walls shall be installed so as to mitigate the passage of air or moisture into or through the wall system. Window sills shall</p>					

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Sub Code:

comply with Section AU105.4.2. Window and door bucks shall be installed in accordance with Figure AU105.4.5 and one of the following methods:

1. Side members of the bucks shall be anchored into the cob wall by embedding the protruding half of half-driven 16d galvanized nails at a maximum 6-inch (152mm) spacing. The buck shall be embedded into the cob not less than 1½ inches (38mm) and set in from each face of the wall not less than 3 inches (76mm).
2. Wood stiffeners not less than nominal 2-inch by 4-inch (51mm by 102mm) shall be attached on-edge to the sides of the buck and embedded in the cob wall a minimum of 3½ inches (89mm). Stiffeners shall anchor into the cob wall with the protruding end of half-driven 16d galvanized nails at a maximum 6-inch (152mm) spacing. Stiffeners shall be set back not less than 3 inches (76mm) from each wall face. Bucks are permitted to be exposed and do not require anchoring nails when stiffeners are used with this method.
3. Other approved methods satisfying the performance requirements of Section AU105.4.5.

Exception: Windows and unframed glass shall be permitted to be embedded directly into a cob wall with an approved design.

Add new text as follows:

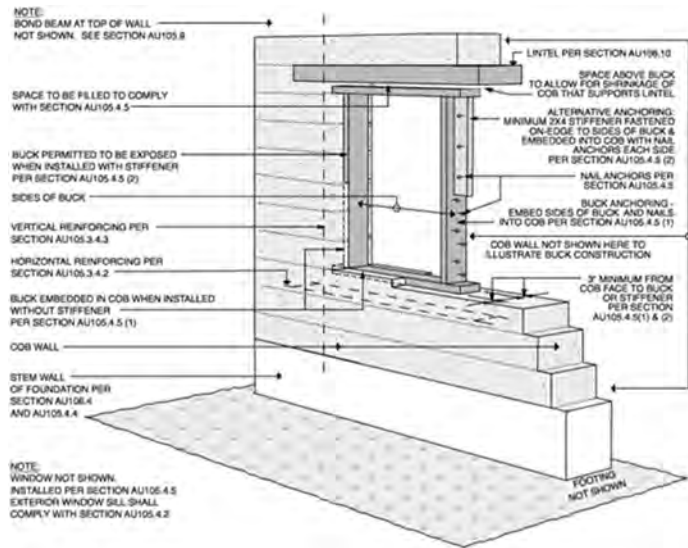


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	<p><u>FIGURE AU105.4.5 WINDOW INSTALLATION (DOOR INSTALLATION SIMILAR)</u> Revise as follows: AU106.1 General. <i>Cob</i> structural walls shall be in accordance with the prescriptive provisions of this section. Designs or portions of designs not complying with this section shall require an <u>approved design by a registered design professional</u> except where an <u>engineered design is required</u>. AU106.6 Compressive strength of cob structural and nonstructural walls. All <i>cob</i> walls shall have a minimum compressive strength of 60 psi (414 kPa). Cob, and <i>cob</i> in walls used as <i>braced wall panels</i> shall have a minimum compressive strength of 85 psi (586 kPa) <u>except with an approved engineered design</u>. AU106.8.2 Support of concentrated loads. Concentrated roof and ceiling loads shall be distributed by structural elements capable of distributing the loads to the <i>cob load-bearing wall</i> and within its allowable bearing capacity as determined in accordance with Section AU106.8. Concentrated loads over lintels or over bond beams spanning openings shall require an <u>approved engineered design by a registered design professional</u>. AU109.2 Thermal resistance. The unit <i>R</i>-value for <i>cob</i> walls with a density of 110 pounds per cubic foot (1762 kg/m³) shall be R-0.22 (RSI 0.0387) per inch of <i>cob</i> thickness. <u>The unit <i>R</i>-value for <i>cob</i> walls with a density of 75 pounds per cubic foot (1762kg/m³) shall be R-0.54 (RSI 0.095) per inch of <i>cob</i> thickness. Linear interpolation is permitted. Extrapolation is not permitted. Walls that vary in thickness along their height or length shall use the average thickness of the wall to determine its <i>R</i>-value. The thermal resistance values of air films and finish materials or additional insulation shall be added to the <i>cob</i> wall's thermal resistance value to determine the <i>R</i>-value of the wall assembly. <i>Cob</i> density shall be measured at equilibrium moisture content.</u></p>					
RB310-22	<p>Revise as follows: AU108.1 Fire-resistance rating. <i>Cob</i> walls are not fire-resistance rated. <i>Cob</i> walls that comply with Table AU108.1 shall be considered to provide have a two-hour fire-resistance rating. Add new text as follows:</p>		X			Added design options.

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Sub Code:

TABLE AU108.1 TWO-HOUR FIRE-RESISTANCE RATED COB WALLS

Allowable supported load (kips)	Density ^a (pcf)	Minimum compressive strength per Section AU106.6 (psi)	Wall type reinforcement per Table AU105.3	Minimum thickness ^b at top of wall (inches)	Minimum thickness ^c at bottom of wall (inches)
1.200	100 ^d	20	3 or 4	8	10
4.8	2.50 pcf top of wall to first course 40 inches from top of wall below extension	20 ^e	3 or 4	8	10
	3.75 pcf 40 inches from top of wall to 20 inches from top of wall below extension	20 ^e	3 or 4	8	10
	3.50 pcf 20 inches from top of wall to bottom of wall	20 ^e	3 or 4	8	10
Non-pedestaling	50 to 100 ^d	22.80 psi 4.60 psi ^f	3 or 4	8	10

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 0.45 kg

- a. Density is to be measured at equilibrium moisture content. Average wall density shall be within +/- 5 pcf of the tabulated value.
- b. Requires an *approved* engineered design per Section AU106.6.
- c. Cob thickness only. The interior and exterior cob faces shall be permitted to be unfinished or receive any plaster finish allowed by this appendix.
- d. Cob walls with more than one density shall be built with heavier densities below lighter densities.
- e. Minimum cob wall thickness shall be whichever is greater in Table AU105.3, Table AU106.11(1) and Table AU108.1.
- f. Wall thicknesses less than 10" require an engineered design.

Revise as follows:

TABLE AU105.3 OUT-OF-PLANE RESISTANCE METHODS AND UNRESTRAINED WALL HEIGHT LIMITS

Portions of table not shown remain unchanged.

WALL TYPE ^{a, b, d} AND METHOD OF OUT-OF-PLANE LOAD RESISTANCE	FOR ULTIMATE DESIGN WIND SPEEDS (mph)	FOR SEISMIC DESIGN CATEGORIES	UNRESTRAINED COB WALL HEIGHT H ^{a, c}		TOP ANCHOR ^e SPACING (inches)	TENSION TIE ^f SPACING (inches)
			Absolute Limit (feet)	Limit Based on Wall Thickness ^g (feet)		
Wall 2: 100 anchors, continuous vertical (T ^h = 8" x 8" E ^h and a 6x6x6x6 pipe) steel mesh 2 inches from each face of wall embedded in foundation	140	A, B, C	H x 8	H x 8T	12	24
Wall 3: top anchors, continuous vertical (T ^h = 8" x 8" E ^h and a 6x6x6x6 pipe) steel mesh 2 inches from each face of wall embedded in foundation	140	A, B, C	H x 8	H x 8T	12	24
Wall 4: top anchors, continuous vertical (E ^h = 6x6x6x6 pipe) steel mesh 2 inches from each face of wall embedded in foundation	140	A, B, C	H x 8	H x 8T	12	24

RB312-22	<p>Revise as follows:</p> <p>AW101.1 Scope. Buildings, structures and building elements fabricated in whole or in part using 3D-printed construction techniques shall be designed, constructed and inspected in accordance with the provisions contained in this appendix and other applicable requirements in this code.</p> <p>Exception: This Appendix shall not be applicable to 3D printed buildings constructed of concrete.</p>	X			Clarification.
RB313-22	<p>Replace as follows:</p> <p>AW103.1 Fabrication process. The process used to fabricate the 3D-printed building construction shall be evaluated by an approved agency in accordance with UL 3401.</p>	X			Clarification.

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	<p>AW103.1 AW103.2 Design organization. 3D-printed buildings, structures and building elements shall be designed by a registered design professional based on a report of findings prepared by approved agency an organization certified in accordance with UL 3401. by an approved agency and approved by the building official in accordance with this section.</p> <p>AW103.2 AW103.3 Design approval. The structural design, construction documents and UL 3401 report of findings shall be submitted for review and approval in accordance with Section 104.11.</p>					
RB314-22	<p>Add new text as follows:</p> <p>Users note. <i>The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.</i></p> <p>About this appendix: <i>Appendix AY provides for the design and construction of accessory dwelling units (ADUs), an alternative to two- and multi-family residential construction that promotes increased housing supply and affordability.</i></p> <p>APPENDIX AY ACCESSORY DWELLING UNITS (ADUs)</p> <p>AY101 GENERAL</p> <p>AY101.1 Scope. ADUs proposed for existing residential construction shall be in accordance with this appendix, other applicable requirements in this code and the existing building together with the ADUs shall not exceed the scoping limitations of Section R101.2.</p> <p>AY101.1.1 Prohibited Conditions. An ADU shall not be permitted within:</p> <ol style="list-style-type: none"> 1. <u>Live/work units located in townhouses.</u> 2. <u>Owner-occupied lodging houses with five or fewer guestrooms.</u> 3. <u>A care-facility with five or fewer persons receiving medical care or custodial care within a dwelling unit.</u> 4. <u>A care-facility with five or fewer persons receiving care within a single-family dwelling.</u> <p>AY101.2 Conditions. ADUs shall be permitted without requiring a change of occupancy to either a two- or multi-family dwelling where in compliance with all of the following:</p>		X		Specifies requirement for ADUs.	

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	<p>1. <u>An ADU shall be permitted within an existing single-family detached dwelling or within an existing townhouse unit, that is within the scope of the IRC.</u></p> <p>2. <u>Only one ADU shall be permitted for each primary dwelling unit.</u></p> <p>3. <u>The owner of a property containing an ADU shall reside in either the primary dwelling unit or the ADU, as of the date of permit approval.</u></p> <p>4. <u>An ADU shall have a separate house number from the primary dwelling unit.</u></p> <p>5. <u>ADUs shall be secondary in size and function to the primary dwelling unit and shall comply with all of the following limits.</u></p> <p>5.1. <u>Not less than 190 square feet (17.65 m²) in area.</u></p> <p>5.2. <u>Not more than 50 percent of the area of the primary dwelling unit.</u></p> <p>5.3. <u>Not more than 1,200 square feet (111 m²) in area.</u></p> <p>6. <u>An ADU shall be provided with a separate entrance than that serving the primary dwelling unit either from the exterior of the building or from a common hallway located within the building.</u></p> <p>7. <u>An ADU shall have a maximum number of two bedrooms.</u></p> <p>8. <u>The location of a detached ADU shall comply with Section R302.</u></p> <p>9. <u>An ADU shall be provided with adequate provisions for electricity, water supply and sewage disposal.</u></p> <p>AY102 DEFINITIONS AY201.1 Definitions. <u>The following words and terms shall, for the purposes of this appendix, have the meanings shown herein.</u> Add new definition as follows: ACCESSORY DWELLING UNIT (ADU). <u>An additional, subordinate dwelling unit on the same lot, that is entirely within a dwelling unit, attached to a dwelling unit, or in a detached structure.</u> Add new text as follows: AY103 PERMITS AY103.1 Required. <u>Any owner or owner's agent who intends to construct an ADU within an existing or proposed building or structure shall first make application to the building official and obtain the required permit.</u></p>					

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	<p>AY104 ADU PLANNING</p> <p>AY104.1 Design. <u>Except as modified by this section, building planning shall be in accordance with Chapter 3 and building structure shall comply with the International Residential Code Part III of this code.</u></p> <p>AY104.1.2 Means of egress. <u>The path of egress travel from an ADU to a public way or to a yard or court that opens to a public way shall be independent of, and not pass through the primary dwelling unit.</u></p> <p>AY104.1.3 Fire separation. <u>For ADUs adjoining the primary dwelling unit, the 1-hour fire-resistance rated wall and floor assembly provisions of Section R302.3 shall not be required provided that both of the following conditions have been met:</u></p> <ol style="list-style-type: none"> <u>1. The interconnection of smoke alarms per Section R314.4 activates the smoke alarms in both the primary dwelling unit and the ADU.</u> <u>2. The interconnection of carbon monoxide alarms per Section R315.5 activates the carbon monoxide alarms in both the primary dwelling unit and the ADU.</u> <p>AY104.1.4 Smoke and carbon monoxide alarms. <u>For ADUs adjoining the primary dwelling unit, the interconnectivity of smoke alarms and carbon monoxide alarms may be independent for the primary dwelling unit and the ADU provided that a 1-hour fire-resistance rating is provided for walls and floor assemblies as per R302.3.</u></p> <p>AY105 UTILITIES</p> <p>A105.1 Heating, ventilation and air-conditioning systems. <u>A primary dwelling unit and an ADU shall be provided with:</u></p> <ol style="list-style-type: none"> <u>1. A separate heating system.</u> <u>2. Separate ducting for heating and cooling systems. Return air openings for heating, ventilation and air-conditioning shall not be taken from another dwelling unit.</u> <u>3. Separate climate controls.</u> <p>AY105.2 Electrical systems. <u>A primary dwelling unit and an ADU shall be provided with:</u></p> <ol style="list-style-type: none"> <u>1. Ready access to the service disconnecting means serving the dwelling unit.</u> <u>2. Ready access for each occupant to all overcurrent devices protecting the conductors supplying the dwelling unit in which they reside.</u> 					

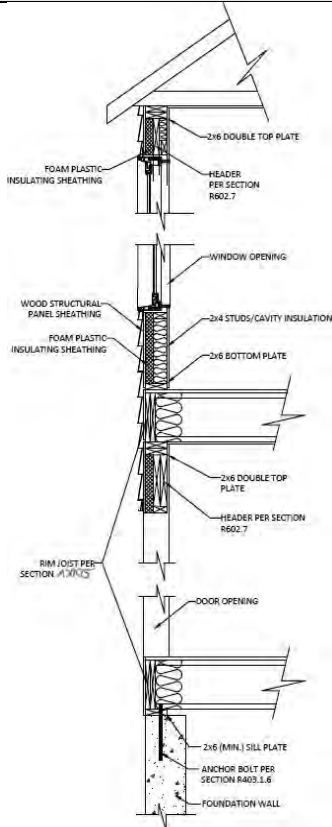
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	<p>AY105.3 Gas piping. A primary dwelling unit and an ADU shall be provided with:</p> <ol style="list-style-type: none"> Ready access to shutoff valves serving the dwelling unit in which they reside. Ready access to appliance shutoff valves serving appliances in the dwelling unit in which they reside. <p>AY105.4 Water service. A primary dwelling unit and an ADU may share a common potable water system provided that there are separate, accessible main shutoff valves allowing the water to be turned off on one-side without affecting the other.</p>					
RB315-22	<p>Add new text as follows:</p> <p>APPENDIX AY EXTENDED PLATE WALL CONSTRUCTION</p> <p>SECTION AY101 GENERAL</p> <p>AY101.1 General. Detached one- and two-family or townhome buildings using extended plate wall (EPW) construction shall comply with the <i>International Residential Code</i> and all of the following:</p> <ol style="list-style-type: none"> Not more that two stories above grade plane in height. Limited to Seismic Design Categories A and B as determined from Figures R301.2.2.1(1) through (6). Limited to ultimate design wind speeds no more than 115 mph as determined from Figure R301.2(2). Comply with the provisions of Section R602 of the <i>International Residential Code</i>, except as modified by the provisions of this Appendix. <p>Exception: Buildings using EPW construction in accordance with an <i>approved design by a registered design professional</i>.</p> <p>SECTION AY102 CONSTRUCTION REQUIREMENTS</p> <p>AY102.1 Framing. The 2x6 top and bottom plates and 2x4 studs shall be used in accordance with Figures AY102.1(1) and AY102.1(2). A single top plate shall not be permitted. Wall framing shall comply with requirements for 2x4 framing in accordance with Section R602 of the <i>International Residential Code</i>.</p>		X		Adds alternative framing method.	

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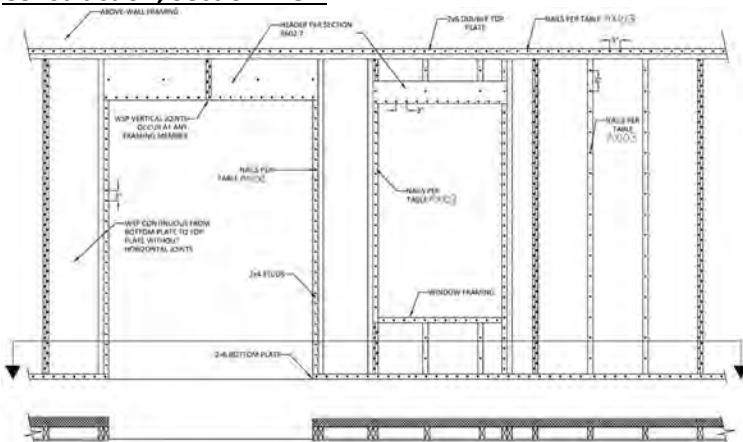
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(Reference in note on bottom left should be to AY102.4)

FIGURE AY102.1(1) Extended Plate Wall (EPW)

Construction, Section View



(Reference in Figure should be to AY102.2 (6 locations))

FIGURE AY102.1(2) Extended Plate Wall, Elevation View

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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Sub Code:																	
	<p>AY102.2 Wood structural panel sheathing. <u>Wood structural panel sheathing with a nominal thickness of 7/16-inch (11 mm) to 1/2-inch (12.7mm) shall be installed vertically and attached to wall plates and studs in accordance with Table AY102.2 and Figure AY102.1(2). The vertical joints between adjacent wood structural panels shall occur only at framing members. Where used as part of wall bracing, each wood structural panel shall be installed without horizontal joints between the extended top and bottom plates.</u></p> <p>TABLE AY102.2 Sheathing Fastener Requirements for EPW</p> <table border="1"> <thead> <tr> <th rowspan="2">Minimum Nail Length and Diameter</th> <th colspan="2">Maximum Fastener Spacing</th> </tr> <tr> <th>At Perimeter of Wood Structural Panels (inches)</th> <th>In Field of Wood Structural Panels (inches)</th> </tr> </thead> <tbody> <tr> <td>No. 32 Power-tool Driven Common Nail (3-1/2" x 0.131")</td> <td>3' O.C.</td> <td>5' O.C.</td> </tr> <tr> <td>16d Box Nail (3-1/2" x 0.131")</td> <td>3' O.C.</td> <td>5' O.C.</td> </tr> </tbody> </table> <p>For SI: 1-inch = 25.4 mm</p> <p>a. <u>At top and bottom plates where the wood structural panel is in direct contact with the framing, 8d common nail (2-1/2" x 0.131") shall be permitted.</u></p> <p>b. <u>Full round head nail with minimum head diameter of 0.281 inches (7 mm).</u></p> <p>c. <u>Nails are in accordance with ASTM F1667. AY102.3 Wall bracing. Wall bracing for EPW construction shall comply with the requirements for WSP or CS-WSP or CS-G bracing methods in Section R602.10 of the <i>International Residential Code</i>, except that the sheathing fasteners shall comply with Table AY102.2.</u></p> <p>AY102.3.1 Simplified wall bracing. <u>With the exception of Section R602.12.2 Item 2, provisions of Section R602.12 of the <i>International Residential Code</i> shall be applicable to EPW construction. The fastening schedule for wood structural panels shall comply with Table AY102.2.</u></p> <p>AY102.4 Rim joist. <u>Rim joists supporting an EPW shall comply with Figure AY102.4(1) or Figure AY102.4(2). Sawn 2x lumber or engineered wood rim board shall be used to construct rim (band) joists. Engineered wood rim board shall comply with Section R602.1.7 of the <i>International Residential Code</i>. The minimum bearing length requirements for the floor joists shall be satisfied or joists shall be supported with metal hangers.</u></p>	Minimum Nail Length and Diameter	Maximum Fastener Spacing		At Perimeter of Wood Structural Panels (inches)	In Field of Wood Structural Panels (inches)	No. 32 Power-tool Driven Common Nail (3-1/2" x 0.131")	3' O.C.	5' O.C.	16d Box Nail (3-1/2" x 0.131")	3' O.C.	5' O.C.					
Minimum Nail Length and Diameter	Maximum Fastener Spacing																
	At Perimeter of Wood Structural Panels (inches)	In Field of Wood Structural Panels (inches)															
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Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

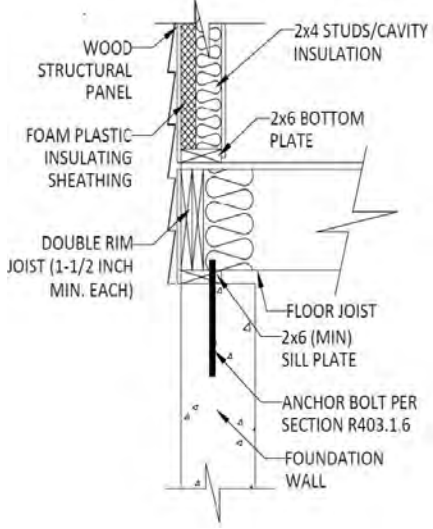
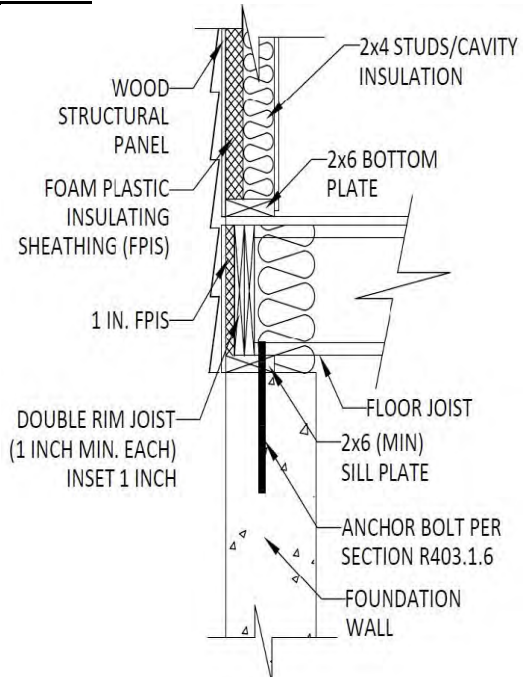
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	 <p>FIGURE AY102.4(1) Rim Joist Construction for EPW - Double Member</p>  <p>FIGURE AY102.4(2) Rim Joist Construction for EPW-Inset Double Member</p> <p>AY102.4.1 Rim joist used as rim header. Wood rim boards, or band joists, that serve as rim board headers shall be constructed</p>					

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	<p>in accordance with Section R602.7.2 of the <i>International Residential Code</i>.</p> <p>AY102.5 Foam plastic insulating sheathing. <u>Foam plastic insulating sheathing with a total thickness of 2 inches (51 mm) shall be installed between top and bottom plates directly to the exterior surface of the 2x4 studs and flush with the 2x6 top and bottom plates as shown in Figure AY102.1(1). The foam plastic insulating sheathing shall comply with ASTM C578 or ASTM C1289 with a minimum compressive strength of 15 psi and shall be permitted to be installed in one or more layers.</u></p> <p>AY102.6 Cladding attachment. <u>Cladding shall be specified and installed in accordance with Section R703 of the <i>International Residential Code</i> and one of the following:</u></p> <ol style="list-style-type: none"> 1. <u>Table R703.3.3 for siding attachment to wood structural panels only.</u> 2. <u>Table R703.8.4(2) for brick tie-spacing and attachment to wood structural panels only.</u> 3. <u>Fastening schedule and fasteners as required by Table R703.3(1), except fastener length shall be selected to meet or exceed the minimum required penetration into framing.</u> <p>AY102.7 Uplift connections. <u>Where roof uplift tie-downs are required in accordance with Section R802.11 of the <i>International Residential Code</i>, the roof tie-downs shall be fastened to either side of the double top plate or, where required to be fastened to studs, shall be installed on the interior face of the EPW in accordance with manufacturer's installation instructions. Where uplift forces determined in accordance with Section R602.3.5 require approved uplift connectors between floors or between foundation and the floor, these uplift connectors shall not rely on wood structural panel sheathing for resisting the wind uplift forces.</u></p>					
RB316-22	<p>Add new text as follows:</p> <p>APPENDIX AY HEMP-LIME CONSTRUCTION</p> <p>SECTION AY101 GENERAL</p> <p>AY101.1 Scope. <u>This appendix shall govern the use of hemp-lime as a nonbearing building material, and wall infill system in Seismic Design Categories A, B, and C, and in Seismic Design Categories D₀, D₁, and D₂ with an <i>approved</i> engineered design by a <i>registered design professional</i> in accordance with Section R301.1.3.</u></p>		X			Adds design option.

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	<p><u>SECTION AY102 DEFINITIONS</u> <u>AY102.1 General.</u> The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 for general definitions.</p> <p><u>SECTION AY103 HEMP-LIME CONSTRUCTION</u> <u>AY103.1 General.</u> Hemp-lime construction shall be limited to the non-structural, solid <i>infill</i> mix of <i>hemp hurd</i> and its <i>binder</i> between or around structural and non-structural wall framing. Hemp-lime <i>infill</i> shall have a density ranging from 12.5 lb/ft³ to 25 lb/ft³ (200 kg/m³ to 400 kg/m³). Hemp-lime walls shall be designed and constructed in accordance with Section AY103 and with Figures AY103.1(1) through AY103.1(4) or an <i>approved</i> alternative design.</p> <p><u>AY103.3 Structure.</u> The structure of buildings using hemp-lime <i>infill</i> shall be in accordance with the IRC and Sections AY103.3.1 through AY103.3.9 or with an <i>approved</i> engineered design by a <i>registered design professional</i>.</p> <p><u>AY103.3.1 Limitations and requirements for buildings using hemp-lime infill.</u> <i>Buildings</i> using hemp-lime <i>infill</i> shall be subject to the following limitations and requirements:</p> <ol style="list-style-type: none"> 1. <u>Number of stories:</u> not more than one <i>story above grade plane</i>. 2. <u>The building height</u> shall not be more than 25 feet (7620 mm). 3. <u>Braced wall panel lengths:</u> in accordance with Section R602.10.3 and Section AY103.3.2. 4. <u>Unit wall height:</u> Hemp-lime walls shall not exceed an average <i>unit wall weight</i> of 65 pounds per square foot (217 kg/m²). <p><u>AY103.3.2 Bracing.</u> Bracing for buildings with hemp-lime <i>infill</i> in Seismic Design Categories A, B, and C shall be in accordance with Section R602.10 and in accordance with the following. Walls with hemp-lime <i>infill</i> shall use Method LIB and shall not be braced with solid sheathing. Hemp-lime <i>infill</i> walls utilizing Method LIB shall not require gypsum board to be installed and the minimum braced wall lengths listed in Section R602.10. Adjustment factors in Table R602.10.3(4) shall be used as applicable. Alternatively, hemp-lime <i>infill</i> walls shall comply with Section R301.1. Walls or wall sections without hemp-lime <i>infill</i></p>					

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	<p>shall be permitted to use any bracing method allowed in Section R602.10.</p> <p>AY103.3.3 Connection of light-frame walls to hemp-lime walls. Light-frame walls perpendicular to, or at an angle to a hemp-lime wall assembly, shall be fastened to the hemp-lime wall in accordance with Section R602 or R603.</p> <p>AY103.3.4 Hemp-lime thickness. Hemp-lime <i>infill</i> shall be not less than 3 inches (76 mm) thick between face of framing and finish. Maximum hemp-lime wall thickness is limited by the average <i>unit wall weight</i> limit of 65 pounds per square foot (317 kg/m²) in Section AY103.3.1, Item 4.</p> <p>AY103.3.5 Contact with structural metal. Structural metal members and components in contact with hemp-lime shall be protected in accordance with Section AY103.4.</p> <p>AY103.3.6 Contact with wood members. Hemp-lime shall be permitted to be in contact with untreated wood members.</p> <p>AY103.3.7 Openings in walls. Door, window, and similar openings in hemp-lime walls shall be in accordance with the following:</p> <ol style="list-style-type: none"> 1. Rough framing for doors and windows shall be part of, or be fastened to the wall framing in accordance with the IRC. 2. An <i>approved water-resistive barrier</i> shall be installed at openings in hemp-lime walls in accordance with Sections AY103.7.4 and AY104.5.1. 3. Header size and their maximum span above openings in bearing walls with hemp-lime <i>infill</i> shall be determined with Table R602.7(1) and Table AY103.3.7 or a design approved by a registered design professional 4. <i>Cast-in-place</i> hemp-lime over and overhanging the face of a header more than 3 inches (76 mm) shall require an <i>approved design</i> of its support by a <i>registered design professional</i>. 5. Hemp-lime blocks overhanging headers shall require an <i>approved design</i> of their support by a <i>registered design professional</i>. <p>TABLE AY103.3.7 ALLOWABLE HEADER SPAN MULTIPLIER^a</p> <table border="1"> <thead> <tr> <th>WALL HEIGHT ABOVE HEADER</th> <th colspan="4">UNIT WALL WEIGHT (psf)</th> </tr> <tr> <th></th> <th>15</th> <th>30</th> <th>45</th> <th>65</th> </tr> </thead> <tbody> <tr> <td>1'-0"</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> </tr> <tr> <td>1'-6"</td> <td>1.00</td> <td>1.00</td> <td>0.90</td> <td>0.90</td> </tr> <tr> <td>2'-0"</td> <td>1.00</td> <td>0.90</td> <td>0.90</td> <td>0.85</td> </tr> <tr> <td>2'-6"</td> <td>1.00</td> <td>0.90</td> <td>0.90</td> <td>0.85</td> </tr> <tr> <td>3'-0"</td> <td>1.00</td> <td>0.90</td> <td>0.90</td> <td>0.80</td> </tr> </tbody> </table>	WALL HEIGHT ABOVE HEADER	UNIT WALL WEIGHT (psf)					15	30	45	65	1'-0"	1.00	1.00	1.00	1.00	1'-6"	1.00	1.00	0.90	0.90	2'-0"	1.00	0.90	0.90	0.85	2'-6"	1.00	0.90	0.90	0.85	3'-0"	1.00	0.90	0.90	0.80					
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	<p>a. <u>Multiply the maximum allowable spans from Table R602.7(1) by the applicable factor to determine the adjusted maximum allowable header span.</u></p> <p>AY103.3.8 Voids. <u>Voids shall be filled with hemp-lime or other approved material before application of finish.</u></p> <p>AY103.3.9 Anchorage of hemp-lime. <u>Hemp-lime for interior and exterior stud walls shall be anchored, or shall be in accordance with an approved design by a registered design professional. Horizontal anchorage rails shall be installed at not more than 24 inches (610 mm) on center and in accordance with Figure AY103.1(1) and AY103.1(3). Horizontal anchorage rails shall be no less than 1 inch by 2 inch (25 mm by 51 mm). Anchorage rails shall be wood, metal per Section AY103.4, or other approved material. Anchorage rails should be attached to the side of the stud facing the interior of the wall with (1) - 8d box nail to each stud and run the entire length of the wall.</u></p> <p>AY103.4 Contact with metal. <u>Metal in contact with hemp-lime shall be stainless steel or primed and painted with a coating in accordance with Section AY103.4.1.</u></p> <p>AY103.4.1 Protective coatings. <u>Metal shall be painted with an epoxy, oil, bituminous paint or other approved coating. Water based paints shall not be used.</u></p> <p>Exception: <u>Heads of pneumatically driven hot-dip galvanized nails.</u></p> <p>AY103.5 Mechanical, electrical and plumbing in hemp-lime infill. <u>Electrical and telecommunication wiring, panels, and boxes, mechanical ducts, plumbing pipes, and other mechanical, electrical and plumbing components in or in contact with hemp-lime infill shall be isolated in sleeves, pipes, conduits, or tubing made of plastic, or of metal in accordance with Section AY103.4, or separated from hemp-lime with an approved alkaline-resistant material.</u></p> <p>AY103.6 Hemp-lime installation methods. <u>Hemp-lime shall be installed in accordance with Sections AY103.6.1 and AY103.6.2, and one of Sections AY103.6.3 through AY103.6.7.</u></p> <p>AY103.6.1 Mix and mixing. <u>The materials and ratio of hemp hurd to binder to water shall match the specifications of the approved test samples in Sections AY106.3 and AY107.1. The water to binder ratio shall be not less than 1:1 and not greater than 2:1 by weight or by binder manufacturer's recommendations. The</u></p>					

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	<p><u>hemp hurd, binder, and water shall be thoroughly and uniformly mixed by manual or mechanical means.</u></p> <p>AY103.6.2 Formwork for hand cast and spray-applied methods. <u>Forms shall be removable or permanent and shall not deform under the lateral pressure of the installed wet hemp-lime.</u></p> <p>AY103.6.2.1 Permanent forms. <u>Permanent forms shall be permitted to be installed on only one side. Permanent forms shall be reed mats, or other approved materials with an open weave. Sheet materials shall not be used as permanent forms. Permanent forms remain after curing as a finish or substrate for another finish.</u></p> <p>Exception: <u>Permanent forms of any material shall be permitted at the jambs, heads, and sills of openings.</u></p> <p>AY103.6.2.2 Removable forms. <u>Removable forms shall be removed within 24 hours after hemp-lime placement or per the binder manufacturer's specifications.</u></p> <p>Exception: <u>Removable forms temporarily supporting hemp-lime infill above wall openings shall not be removed for a minimum of 3 days or per binder manufacturer's specifications.</u></p> <p>AY103.6.3 Hand cast. <u>Hand cast hemp-lime infill shall be installed in uniform lifts not greater than 4 inches (102 mm) in height. Each lift shall be tamped to achieve stable walls free of voids.</u></p> <p>AY103.6.4 Spray-applied. <u>Spray-applied hemp-lime infill shall be installed in accordance with Sections AY103.6.4.1 through AY103.6.4.4.</u></p> <p>AY103.6.4.1 Forms. <u>Forms shall be installed on one side in accordance with Section AY103.6.2 or AY103.6.7.2 for lined applications.</u></p> <p>AY103.6.4.2 Mixing. <u>Mixing shall be in accordance with Sections AY103.6.1 or the spray equipment manufacturer's instructions.</u></p> <p>AY103.6.4.3 Installation. <u>Hemp-lime shall be sprayed from the base up and per the spray equipment manufacturer's and/or binder manufacturer's instructions.</u></p> <p>AY103.6.4.4 Screeding. <u>Excess hemp-lime shall be removed by screeding per the spray equipment manufacturer's and/or binder manufacturer's instructions.</u></p>					

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	<p>AY103.6.5 Precast blocks. <i>Precast</i> hemp-lime blocks shall be cast and installed in accordance with Sections AY103.6.5.1 through AY103.6.5.5 or per manufacturer's specifications:</p> <p>AY103.6.5.1 Block dimensions. Hemp-lime blocks shall be a minimum thickness of 3 inches (76 mm) in all dimensions and shall not exceed the maximum thickness in accordance with Section AY103.3.4.</p> <p>AY103.6.5.2 Casting. Hemp-lime blocks shall be cast in accordance with Sections AY103.6.1 through AY103.6.6 as applicable, or by other means that produce <i>approved</i> blocks.</p> <p>AY103.6.5.3 Mortar. Mortar shall consist of <i>lime</i> and sand or other aggregate with a ratio of not less than 1:1 and not greater than 1:3, or other <i>approved</i> mortar. The <i>lime</i> shall be hydrated Type N or S, or hydraulic <i>lime</i>.</p> <p>AY103.6.5.4 Installation. Hemp-lime blocks shall be installed in a running bond between and around wall framing members. Mortar shall fill all voids between blocks and shall not be not less than 1/8 inch (3 mm) thick. Spaces between blocks and framing shall be not more than 3/4 inch (19 mm) and shall be filled with mortar.</p> <p>AY103.6.5.5 Hemp-lime block veneer. Hemp-lime block veneer shall not exceed 50 pounds per square foot (244 kg/m²) of veneer only <i>unit wall weight</i>, shall be limited to 5-inch (127 mm) thickness, and shall be anchored to the supporting wall studs in accordance with Section R703.8.4 or secured with <i>approved</i> ties and fasteners to an <i>approved</i> backing. Metal ties and fasteners shall be protected in accordance with Section AY103.4.</p> <p>AY103.6.6 Hemp-lime panels. Hemp-lime panels shall require an <i>approved</i> design by a <i>registered design professional</i>.</p> <p>AY103.6.7 Lined application. Interior and exterior hemp-lime <i>lined applications</i> shall be installed in accordance with Section AY103.6.7.1 through AY103.6.7.6 and Sections AY103.6.3 through AY103.6.6 as applicable.</p> <p>AY103.6.7.1 General. Prior to installation, the concrete or masonry walls receiving the installation shall be clean, and free of loose mortar. Lined installations on basement walls shall require an <i>approved</i> design by a <i>registered design professional</i>. Exterior applications shall be in accordance with Section AY103.7.6. Attachment of <i>precast</i> blocks to the receiving wall shall be in accordance with Section AY103.6.5.5.</p>					

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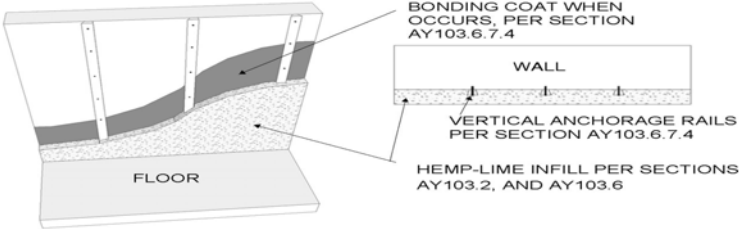
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	<p>Attachment of hemp-lime panels to the receiving wall shall be in accordance with Section AY103.6.6.</p> <p>AY103.6.7.2 Formwork. <i>Forms</i> shall be in accordance with Section AY103.6.2. Permanent<i>formwork</i> shall not be allowed on the non- receiving wall side.</p> <p>AY103.6.7.3 Thin lining. Thin linings are from 3 to 4¾ inches (76 to 121 mm) thick. Hand troweled hemp-lime shall be installed over a <i>bonding coat</i>.</p> <p>AY103.6.7.4 Medium lining. Medium linings exceed 4¾ inches</p>  <p>(121 mm) and are not greater than 6½ inches (165 mm) thick. <i>Forhand cast or spray-applied</i>, 1½ inch (38 mm) X 1½ inch (38 mm) dovetail shaped vertical anchorage rails shall be attached with the narrowest face to the receiving wall, spaced not less than 20 inches (508 mm) and not greater than 32 inches (813 mm), with fasteners not less than 2 feet (610 mm) and not greater than 3 feet (914 mm) apart. <i>Hand cast</i> medium linings shall be installed over a <i>bonding coat</i> on the receiving wall. See Figure AY103.6.7.4.</p> <p>FIGURE AY103.6.7.4 TYPICAL HEMP-LIME MEDIUM LINING</p> <p>AY103.6.7.5 Thick lining. Thick linings exceed 6½ inches (165 mm) and shall not be greater than 8 inches (203 mm) thick or per the binder manufacturer’s specifications. For <i>hand cast or spray-applied</i>, 1½ inch (38 mm) x 2½ inch (64 mm) vertical anchorage rails shall be attached with the 2½ inch (64 mm) face parallel to the receiving wall and spaced not less than 20 inches (508 mm) and not greater than 32 inches (813 mm). The anchorage rails shall be fastened to and separated from the receiving wall with 2 inch (51 mm) spacers not less than 3 feet (914 mm) and not greater than 4 feet (1,219 mm) apart. <i>Hand cast</i> thick linings shall be installed over a <i>bonding coat</i> on the receiving wall. See Figure AY103.6.7.5.</p>					

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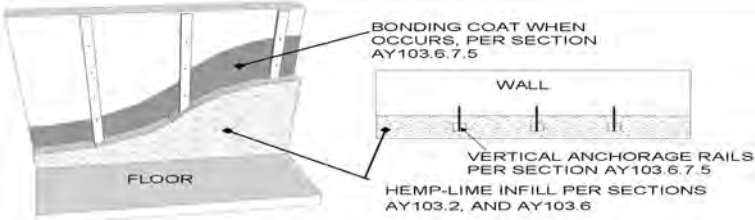
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	 <p>FIGURE AY103.6.7.5 TYPICAL HEMP-LIME THICK LINING</p> <p>AY103.6.7.6 Minimum thickness at anchorage rails. <u>The minimum thickness of hemp-lime between the exterior face of vertical anchorage rails and finished face of hemp-lime shall be 3 inches (76 mm) or in accordance with the binder manufacturer’s specifications.</u></p> <p>AY103.7 Moisture Control. <u>Hemp-lime assemblies shall be protected from water intrusion and damage in accordance with Section AY103.7.1 through AY103.7.9.</u></p> <p>AY103.7.1 Water-resistive barriers. <u>Water-resistive barriers are prohibited on hemp-lime walls, except as permitted or required elsewhere in this appendix.</u></p> <p>AY103.7.2 Vapor retarders. <u>Vapor retarders are prohibited on hemp-lime walls, except as permitted or required elsewhere in this appendix.</u></p> <p>AY103.7.3 Penetrations in hemp-lime walls. <u>Penetrations in exterior hemp-lime walls shall be sealed with anapproved sealant or gasket on the exterior side of the wall in all climate zones, and on the interior side of the wall in Climate Zones 5, 6, 7, 8 and Marine 4, as defined in Chapter 11.</u></p> <p>AY103.7.4 Horizontal surfaces. <u>Hemp-lime walls and other hemp-lime assemblies shall be provided with awater-resistive barrier at weather-exposed horizontal surfaces. The water-resistive barrier shall be of a material and installation that will prevent water from entering the wall system. Horizontal surfaces shall include exterior window sills, and sills at exterior niches. Horizontal surfaces shall be sloped not less than 1 unit vertical in 12 units horizontal (8-percent slope) and shall drain away from hemp-lime walls and other assemblies. Where the water-resistive barrier is below the finish material, it shall be sloped not less than 1 unit vertical in 12 units horizontal (8-percent slope) and shall drain to the exterior surface of the hemp-lime wall’s vertical finish.</u></p>					

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	<p>AY103.7.5 Air barrier. Exterior hemp-lime walls shall have a <u>vapor permeable air barrier</u> on all exterior and interior surfaces, except as permitted or required elsewhere in this appendix. Plaster in accordance with Section AY104.3 shall be acceptable as an <u>air barrier</u>.</p> <p>AY103.7.6 Separation of hemp-lime and earth or paved areas. Hemp-lime shall be not less than 8 inches (203 mm) above exposed earth or paved areas.</p> <p>AY103.7.7 Separation of exterior plaster and earth or paved areas. Exterior <u>plaster</u> applied to hemp-lime shall be not less than 8 inches (203 mm) above exposed earth or paved areas.</p> <p>AY103.7.8 Separation of hemp-lime and exterior plaster from foundation. Hemp-lime and exterior <u>plaster</u> shall be separated from the <u>foundation</u> with an <u>approved</u> moisture barrier.</p> <p>AY103.7.9 Base of wall flashing. Outer face of exterior walls shall be flashed to prevent water intrusion at the base of the wall.</p> <p>SECTION AY104 FINISHES</p> <p>AY104.1 General. The interior and exterior surfaces of hemp-lime walls shall be protected with a finish in accordance with Section AY104. Finishes shall have a vapor permeance rating of 5 perms or greater tested in accordance with Procedure B of ASTM E96.</p> <p>AY104.2 Moisture content prior to application of finish. Hemp-lime <u>infill</u> shall have an average moisture content of no more than 20 percent at a depth of 1½ inches (38 mm), as measured from the face of the wall to which the finish will be applied for each wall. Moisture content shall be measured with a probe style wood moisture equivalent (WME) meter.</p> <p>AY104.3 Plaster Finish. Exterior <u>plaster</u> shall be <u>lime plaster, clay plaster</u> in accordance with Section AY104.3.6.3, or other <u>approved plaster</u>. Interior <u>plasters</u> shall be any <u>plaster</u> permitted in Sections AY104.3.1 through AY104.3.9. <u>Plasters</u> shall be permitted to be applied directly to the surface of the hemp-lime <u>infill</u> without reinforcement, except that the juncture of dissimilar substrates shall be in accordance with Section AY104.5. <u>Plasters</u> shall have a thickness of not less than ½ inch (13 mm) on the interior and ¾ inch (19 mm) on the exterior, and shall be installed in not less than two coats, or per binder manufacturer's instructions. Not less than ⅜ inch (10 mm)</p>					

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	<p><u>exterior plaster is permitted behind exterior cladding in accordance with Section AY104.6.</u></p> <p>AY104.3.1 Membranes. <u>Membranes are prohibited between plaster and hemp-lime except where a membrane is allowed or required elsewhere in this appendix.</u></p> <p>AY104.3.2 Lath and mesh for plaster. <u>The surface of the hemp-lime functions as lath, and other lath or mesh shall not be required, except as required in Section AY104.5.</u></p> <p>AY104.3.3 Plaster additives. <u>Additives shall be permitted to increase plaster workability, durability, strength or water resistance. Additives shall not reduce the plaster vapor permeance rating to less than 5 perms. Additives containing polymers are prohibited.</u></p> <p>AY104.3.4 Plaster reinforcing fibers. <u>Reinforcing fibers shall be permitted in plaster. Acceptable reinforcing fibers include hemp fiber, chopped straw, sisal, animal hair and fiberglass.</u></p> <p>AY104.3.5 Lime plaster. <u>Lime plaster is any plaster with a binder primarily composed of calcium hydroxide (Ca(OH)₂) including Type N or S hydrated lime, hydraulic lime, natural hydraulic lime or slaked quicklime. Hydrated lime shall comply with ASTM C206. Hydraulic lime shall comply with ASTM C1707. Natural hydraulic lime shall comply with ASTM C141 and CEN EN 459. Quicklime shall comply with ASTM C5. Lime plaster shall contain sufficient lime to fully bind the sand or other aggregate, and shall be permitted to contain pozzolans.</u></p> <p>AY104.3.6 Clay plaster. <u>Clay plaster shall be any plaster having a clay or clay subsoil binder. Such plaster shall contain sufficient clay to fully bind the sand or other aggregate.</u></p> <p>AY104.3.6.1 Clay subsoil requirements. <u>The suitability of clay subsoil shall be determined in accordance with the Figure 2 Ribbon Test and the Figure 3 Ball Test in the appendix of ASTM E2392/E2392M.</u></p> <p>AY104.3.6.2 Thickness and coats. <u>Clay plaster shall be not less than ¾ inch (19 mm) thick, and shall be applied in not less than two coats.</u></p> <p>AY104.3.6.3 Rain-exposed. <u>Clay plaster, where exposed to rain, shall be finished with an approved erosion-resistant finish.</u></p> <p>AY104.3.6.4 Prohibited finish coat. <u>Plaster containing Portland cement shall not be permitted as a finish coat over clay plasters.</u></p>					

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	<p>AY104.3.7 Clay-lime plaster. <u>Clay-lime plaster shall be composed of refined <i>clay</i> or <i>clay subsoil</i>, sand, and <i>lime</i>.</u></p> <p>AY104.3.8 Hemp-lime plaster. <u>Hemp-lime plaster shall be composed of <i>hemp hurd</i> and <i>lime</i>, and shall be permitted to contain sand or other aggregate, and <i>pozzolans</i>.</u></p> <p>AY104.3.9 Hemp-clay plaster. <u>Hemp-clay plaster shall be composed of <i>hemp hurd</i> and <i>clay</i> or <i>clay subsoil</i>, and shall be permitted to contain sand or other aggregate.</u></p> <p>AY104.4 Separation of wood and plaster. <u>Wood framing at the exterior surface of hemp-lime walls shall be separated from exterior plaster with Grade D paper or other approved material, except where the wood is naturally durable.</u></p> <p>Exception: <u>Exterior <i>clay</i> plaster shall not be required to be separated from wood.</u></p> <p>AY104.5 Bridging across dissimilar substrates. <u>Bridging shall be installed onto and across dissimilar substrates prior to the application of plaster on the interior or exterior. Acceptable bridging materials include expanded metal lath, woven wire mesh, welded wire mesh, fiberglass mesh, <i>reed mat</i>, burlap, or other <i>approved</i> material. Bridging shall extend not less than 3 inches (76 mm), on both sides of the juncture.</u></p> <p>AY104.5.1 Returns on recessed openings. <u>Plaster or other exterior finish returns at recessed windows and doors shall require an <i>approved</i> design that prevents the intrusion of moisture.</u></p> <p>AY104.6 Non-plaster exterior cladding. <u>Non-plaster exterior <i>cladding</i> shall be spaced not less than 1 inch (25 mm) from the face of the <i>water-resistive barrier</i> or <i>air barrier</i> to the back of the cladding to allow for ventilation. The ventilation space shall be open at the top and bottom and be provided with insect screening.</u></p> <p>AY104.6.1 Water-resistive and air barriers. <u><i>Water-resistive barriers</i> and <i>air barriers</i>, when <i>vapor permeable</i>, are permitted to be applied directly to the hemp-lime when exterior <i>cladding</i> is installed in accordance with Section AY104.6.</u></p> <p>AY104.7 High moisture interior environments. <u>Exterior hemp-lime walls enclosing showers or steam rooms shall be lined on the interior side with ceramic tiles on an <i>approved</i> tile backer board, ceramic tiles on <i>alime</i> plaster, or a <i>tadelakt</i> finish.</u></p> <p>SECTION AY105 FIRE RESISTANCE</p>					

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

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	<p>AY105.1 Fire-resistance rating. Hemp-lime walls do not have a fire-resistance rating. Fire-resistance ratings for hemp-lime wall assemblies shall be determined in accordance with the required testing in Section R302.9.3.</p> <p>AY105.2 Clearance to fireplaces and chimneys. Hemp-lime surfaces adjacent to fireplaces or chimneys shall be finished with not less than 3/8 inch (10 mm) thick plaster of any type permitted by this appendix. Clearance from the face of such plaster to fireplaces and chimneys shall be maintained as required from fireplaces and chimneys to combustibles in Chapter 10, or as required by manufacturer’s instructions, whichever is more restrictive.</p> <p>SECTION AY106 THERMAL PERFORMANCE</p> <p>AY106.1 Mass Walls. Walls with hemp-lime infill shall be classified as mass walls in accordance with Section N1102.2.5 (R402.2.5) and shall meet the R-value requirements for mass walls in Table N1102.1.3 (R402.1.2), when their heat capacity (C) is greater than or equal to 6 Btu/ft²× °F (123 kJ/m²× K) in Equation AY-1.</p> $C = \rho \times t \times 0.299 \text{ Btu/lb} \times \text{°F} \quad \text{(Equation AY-1)}$ <p>where:</p> <p>C = Heat capacity (Btu/ft²× °F).</p> <p>ρ = Density of hemp-lime infill (pounds per cubic foot).</p> <p>t = Thickness of hemp-lime infill (in feet).</p> <p>AY106.2 Thermal resistance. Hemp-lime has the unit thermal resistance values in accordance with Table AY106.2. Alternatively, the unit R-value of hemp-lime shall be determined with one of the following tests by an approved laboratory: ASTM C518, ASTM C1363, ASTM C177, or ASTM C1114. Test results from a specific hemp-lime mix shall be permitted to be used for multiple projects.</p> <p>Table AY106.2 Thermal Resistance of Hemp-Lime^a</p> <p>a. <u>Linear interpolation is permitted. Extrapolation is not permitted.</u></p> <p>AY106.3 Density measurement. Hemp-lime density shall be measured based on <u>approved</u> test samples as follows:</p> <ol style="list-style-type: none"> Three samples of the proposed hemp-lime mix shall be placed moist to completely fill a 6-inch by 6-inch by 12-inch (152 mm 					

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	<p>by 152 mm by 305 mm) form, a 6 inch (152mm) diameter x 12 inch (305 mm) length form or other <i>approved</i> form, following the application method and procedure that will be used during construction.</p> <p>2. Samples shall be removed from the forms within 24 hours after hemp-lime placement or per the <i>binder</i> manufacturer’s specifications.</p> <p>3. Samples shall be cured/dried for a minimum of 14 days in indoor ambient conditions before density determination.</p> <p>4. Density shall be determined by Equation AY-2. $\rho = w/V$ (Equation Ay-2) where ρ = Density of hemp-lime infill (pounds per cubic foot). w = Weight of hemp-lime infill sample (pounds). V = Volume of hemp-lime sample (in cubic feet).</p> <p>AY106.4 Compliance with Section R302.10.1. Hemp-lime <i>infill</i> meet the requirements for insulation materials in Section R302.10.1 for flame spread index and smoke-developed index as tested in accordance with ASTM E84.</p> <p>SECTION AY107 MECHANICAL PERFORMANCE</p> <p>AY107.1 Hemp-lime infill integrity. The integrity of hemp-lime <i>infill</i> and its ability to hold a plaster finish shall be demonstrated with a minimum compressive strength of 29 psi (0.2 MPa). Test results from a specific hemp-lime mix shall be permitted to be used for multiple projects.</p> <p>AY107.1.1 Demonstration of compressive strength. The compressive strength of the hemp-lime mix shall be demonstrated to the building official before the placement of hemp-lime infill, with compressive strength tests and an associated report by an <i>approved</i> laboratory tested as follows:</p> <p>1. Three samples of the proposed hemp-lime mix shall be placed moist to completely fill a 6-inch by 6-inch by 12-inch (152 mm by 152 mm by 305 mm) form, a 6 inch (152mm) diameter x 12 inch (305 mm) length form, or other <i>approved</i> form, following the application method and procedure that will be used during construction.</p> <p>2. Samples shall be removed from the forms within 24 hours after hemp-lime placement or per the <i>binder</i> manufacturer’s specifications.</p>					

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	<p>3. <u>Samples shall be cured/dried for a minimum of 14 days in indoor ambient conditions before testing.</u></p> <p>4. <u>The opposite faces shall be capped with plaster of paris to achieve smooth and parallel faces, after which the sample shall reach ambient moisture conditions before testing.</u></p> <p>5. <u>The horizontal cross section of the dried sample as tested, and the maximum applied load at failure shall be used to calculate the sample’s compressive strength.</u></p> <p>6. <u>The average value of the samples shall be used to determine the mix’s compressive strength.</u></p> <p>SECTION AY108 REFERENCED STANDARDS AY108.1 General. <u>See Table AY108.1 for standards that are referenced in various sections of this appendix. Standards are listed by the standard identification with the effective date, the standard title, and the section or sections of this appendix that reference this standard.</u></p> <p>TABLE AY108.1 REFERENCED STANDARDS</p> <table border="1"> <thead> <tr> <th>STANDARD ACRONYM</th> <th>STANDARD NAME</th> <th>SECTION'S HEREIN REFERENCED</th> </tr> </thead> <tbody> <tr> <td>ASTM E96-00</td> <td>Standard Test Methods for Water Vapor Transmission of Materials</td> <td>AY104.1</td> </tr> <tr> <td>ASTM C5-10</td> <td>Standard Specification for Quicklime for Structural Purposes</td> <td>AY104.3.5</td> </tr> <tr> <td>ASTM C141/C141M-14</td> <td>Standard Specification for Hydrated Hydraulic Lime for Structural Purposes</td> <td>AY104.3.5</td> </tr> <tr> <td>ASTM C206-14</td> <td>Standard Specification for Finishing Hydrated Lime</td> <td>AY104.3.5</td> </tr> <tr> <td>ASTM C1707-11</td> <td>Standard Specification for Pozzolanic Hydraulic Lime for Structural Purposes</td> <td>AY104.3.5</td> </tr> <tr> <td>ASTM E2382/ ASTM E2382M- 10</td> <td>Standard Guide for Design of Earth Wall Building Systems</td> <td>AY104.3.6.1</td> </tr> <tr> <td>CEN EN 459-2015</td> <td>Part 1: Building Limes. Definitions, Specifications and Conformity Criteria; Part 2: Test Methods</td> <td>AY104.3.5</td> </tr> <tr> <td>ASTM C518-21</td> <td>Transmission Properties by Means of the Heat Flow Meter Apparatus</td> <td>AY106.2</td> </tr> <tr> <td>ASTM C1363-19</td> <td>Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus</td> <td>AY106.2</td> </tr> <tr> <td>ASTM C177-19</td> <td>Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus</td> <td>AY106.2</td> </tr> <tr> <td>ASTM C1114-06(2019)</td> <td>Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Thin-Heater Apparatus</td> <td>AY106.2</td> </tr> <tr> <td>ASTM E84-21a</td> <td>Standard Test Method for Surface Burning Characteristics of Building Materials</td> <td>AY106.4</td> </tr> </tbody> </table>	STANDARD ACRONYM	STANDARD NAME	SECTION'S HEREIN REFERENCED	ASTM E96-00	Standard Test Methods for Water Vapor Transmission of Materials	AY104.1	ASTM C5-10	Standard Specification for Quicklime for Structural Purposes	AY104.3.5	ASTM C141/C141M-14	Standard Specification for Hydrated Hydraulic Lime for Structural Purposes	AY104.3.5	ASTM C206-14	Standard Specification for Finishing Hydrated Lime	AY104.3.5	ASTM C1707-11	Standard Specification for Pozzolanic Hydraulic Lime for Structural Purposes	AY104.3.5	ASTM E2382/ ASTM E2382M- 10	Standard Guide for Design of Earth Wall Building Systems	AY104.3.6.1	CEN EN 459-2015	Part 1: Building Limes. Definitions, Specifications and Conformity Criteria; Part 2: Test Methods	AY104.3.5	ASTM C518-21	Transmission Properties by Means of the Heat Flow Meter Apparatus	AY106.2	ASTM C1363-19	Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus	AY106.2	ASTM C177-19	Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus	AY106.2	ASTM C1114-06(2019)	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Thin-Heater Apparatus	AY106.2	ASTM E84-21a	Standard Test Method for Surface Burning Characteristics of Building Materials	AY106.4					
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Sub Code:

R905.1.1(2). *Underlayment* shall be attached in accordance with Table R905.1.1(3).

Exceptions:

1. As an alternative, self-adhering polymer-modified bitumen underlayment bearing a label indicating compliance with ASTM D1970 and installed in accordance with both the *underlayment* manufacturer's and roof covering manufacturer's instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted.
2. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane bearing a *label* indicating compliance with ASTM D1970, installed in accordance with the *manufacturer's installation instructions* for the deck material, shall be applied over all joints in the roof decking. An *approved underlayment* complying with Table R905.1.1(1) for the applicable roof covering.

TABLE R905.1.1(1) UNDERLAYMENT TYPES

ROOF COVERING	SECTION	AREA S WHERE WIND DESIGN IS NOT REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1	AREA S WHERE WIND DESIGN IS REQUIRED IN ACCORDANCE WITH FIGURE R301.2.1.1
Asphalt shingles	R905.2	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D6757 ASTM D8257	ASTM D226 Type II ASTM D4869 Type III or Type IV ASTM D8257
Clay and concrete tile	R905.3	ASTM D226 Type II ASTM D2626 Type I ASTM D6380 Class M mineral-surfaced roll roofing ASTM D8257	ASTM D226 Type II ASTM D8257
Metal roof shingles	R905.4	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type III or Type IV ASTM D8257
Mineral-surfaced roll roofing	R905.5	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type III or Type IV ASTM D8257
Slate and slate-type shingles	R905.6	ASTM D226 Type I ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type III or Type IV ASTM D8257
Wood shingles	R905.7	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type III or Type IV ASTM D8257
Wood shakes	R905.8	ASTM D226 Type I or II ASTM D4869 Type I, II, III or IV ASTM D8257	ASTM D226 Type II ASTM D4869 Type III or Type IV ASTM D8257
Metal panels	R905.10	Manufacturer's instructions ASTM D8257	ASTM D226 Type II ASTM D4869 Type III or Type IV ASTM D8257
Photovoltaic shingles	R905.16	ASTM D4869 Type I, II, III or IV ASTM D6757 ASTM D8257	ASTM D4869 Type III or Type IV ASTM D8257

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S24-22 Part II	<p>Revise as follows: R905.1.1 Underlayment. <i>Underlayment in accordance with this section is required</i> for asphalt shingles, clay and concrete tile, <i>metal roof shingles</i>, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, <i>metal roof panels</i> and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. <i>Underlayment</i> materials required to comply with ASTM D226, D1970, D4869, and D6757, or D8257 shall bear a <i>label</i> indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). <i>Underlayment</i> shall be applied in accordance with Table R905.1.1(2). <i>Underlayment</i> shall be attached <u>fastened</u> in accordance with Table R905.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. As an alternative, self-adhering polymer modified bitumen underlayment bearing a label indicating compliance with ASTM D1970 and installed in accordance with both the <i>underlayment</i> manufacturer's and roof covering manufacturer's instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted. 2. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane bearing a <i>label</i> indicating compliance with ASTM D1970, installed in accordance with the <i>manufacturer's installation instructions</i> for the deck material, shall be applied over all joints in the roof decking. An <i>approved underlayment</i> complying with Table R905.1.1(1) for the applicable roof covering. <p>Exception: Structural metal panels that do not require a substrate or underlayment.</p> <p>TABLE R905.1.1(1) UNDERLAYMENT TYPES</p>		X			Clarification.

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Wood shakes	R905.8																																			
Metal panels	R905.10		Exception: Self-adhering polymer modified bitumen underlayment shall not be installed under wood shakes or wood shingles.																																	
S35-22 Part II	<p>Revise as follows:</p> <p>R905.16.4 Material standards. <i>Photovoltaic shingles</i> shall be <i>listed and labeled</i> in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.</p> <p>R905.17.5 Material standards. <i>BIPV roof panels</i> shall be <i>listed and labeled</i> in accordance with UL 7103 or with both UL 61730-1 and UL 61730-2.</p>		X			Editorial.																														
S240-22 Part II	<p>Revise as follows:</p> <p>R703.7.3 Water-resistive barriers. Water-resistive barriers shall be installed as required in Section R703.2 and, where applied over wood-based exterior sheathing, shall comply with Section R703.7.3.1 or R703.7.3.2.</p> <p>Exception: <u>Sections R703.7.3.1 and R703.7.3.2 shall not apply to construction where accumulation, condensation or freezing of moisture will not damage the materials.</u></p>			X	Required second layer of water-resistive barrier for stucco assemblies containing non-wood-based exterior house wrap estimated to cost \$0.17/ft. ² For moist and marine climates, costs range from \$0.30-\$1.90/ft. ²	Improves stucco assemblies where accumulation, condensation or freezing of moisture will damage materials.																														
S241-22 Part II	<p>Revise as follows:</p> <p>R703.7.3 Water-resistive barriers. Water-resistive barriers shall be installed as required in Section R703.2 and, where applied over wood-based sheathing, shall comply with Section R703.7.3.1 or R703.7.3.2.</p>		X			Clarification.																														

Table 11. 2024 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2024 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	Neutral	Increase		
Sub Code:						
	<p>R703.7.3.1 Dry climates . In Dry (B) climate zones indicated in Figure N1101.7, <i>water-resistive barriers</i> shall comply with one of the following:</p> <ol style="list-style-type: none"> 1. The <i>water-resistive barrier</i> shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of a <i>water-resistive barrier</i> complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane. Flashing installed in accordance with Section R703.4 and intended to drain to the <i>water-resistive barrier</i> shall be directed between the layers. 2. The <i>water-resistive barrier</i> shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of a <i>water-resistive barrier</i> complying with ASTM E2556, Type II. The <i>water-resistive barrier</i> shall be separated from the stucco by a layer of foam plastic <i>insulating sheathing</i> or other non-water-absorbing layer, or a designed drainage space. A means of drainage, as prescribed in R703.1.1, shall be provided to the exterior side of the water-resistive barrier or a drainage space or means of drainage complying with R703.7.3.2. Flashing installed in accordance with Section 703.4 and intended to drain to the water-resistive barrier shall be directed to the exterior side of the water-resistive barrier. 					

**APPENDIX L
DISCLAIMER**

Probable Construction Costs Opinions

Assumptions

This Estimate is not a guarantee of Final Bid Cost or of Final Project Cost.

This is an Opinion of Probable Cost of Mechanical, Electrical, and Piping (M.E.P.) Systems for the proposed buildings.

- The estimate was compiled using documents provided by various sources.
- The estimate is representative of average unit pricing and labor from historical job costs of similar type, cost and labor data from Mechanical Contractors Association of America (MCAA), CostWorks 2015 Qtr. 2 (Change Date and Qtr) by R.S. Means Company Inc, National Electrical Contractors Association (NECA) and Sheet Metal Estimating by Herbert C. Wendes.
- The subcontractor unit rates include the subcontractor's overhead and profit, unless otherwise stated.
- The mark-ups included in the unit prices cover the cost of field overhead, home office overhead and profit, and range from 15% to 25% of the costs of a particular item.

Since we have no control over the cost of labor, material and equipment, or the contractor's method of carrying out the work and determining the price, or over competitive bidding or market conditions, this opinion of probable construction cost provided is made on the basis of experience and qualifications. This opinion represents our best judgment as professional construction consultants with the Construction Industry. However, we cannot and do not guarantee that proposals, bids or the construction cost will not vary from the opinions of probable cost in this estimate.

General Assumptions:

- "Allowances" are considered to be an allotted sum of money for a particular system or scope of work for which sufficient detail is not available to determine a definitive cost.
- These cost allowances are included to project a final cost to include labor, material, equipment and any subcontractor costs.
- The owner receives the savings for any amount under the allowance and is at risk for any amount over the allowance.
- The estimate is in today's dollars, and has been adjusted to the local area.
- This estimate does not include any fees or permits.
- This estimate is intended to reflect construction costs only.
- This estimate is intended to reflect normal construction schedules only.
- Variations in material costs, labor efficiencies, wage rates, union practices, and bid climate will effect final costs.
- Workers will report to the actual job site.
- Materials delivered to the actual job site will need to be scheduled.
- No premium or overtime has been included.
- No General Construction costs have been included.
- All utilities have sufficient capacity for the added loads.