



# FSEC Energy Research Center

UNIVERSITY OF CENTRAL FLORIDA

## COMMERCIAL CODE REVIEW FOR THE 2023 FLORIDA BUILDING ENERGY CODE

### *Interim Report*

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### **Submitted to**

Department of Business and Professional Regulation  
Office of Codes and Standards  
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Tallahassee, FL 32399  
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## Appendix A: Commercial IECC 2021 Changes Review Summary

Commercial 2021 IECC changes with respect to 2018 IECC and 2020 Florida Energy Code Energy Conservation (FBC-EC) is summarized in Table A. Table A has six columns and are defined as follows:

**2021 IECC Section and Title:** is the code Section and title for the 2021 IECC.

**ICC Code Change No:** Proposed code change number in the ICC's *Complete Revision History to the 2021 I-Codes* document.

**Change Summary b/t 2018 IECC and 2021 IECC:** brief description of the code change between the 2018 IECC and 2021 IECC.

**Change Summary b/t 2020 FBC-EC and 2018 IECC:** brief description of the code change between the 2020 FBC-EC and 2021 IECC.

**Anticipated Energy Impact on FBC-EC if Adopted:** Anticipated energy use impact from the code change if it is adopted in the FBC-EC. This is usually a decrease energy use, an increase energy use, or none. "None" means the code change has no or negligible impact on energy use.

**Anticipated Cost Impact on FBC-EC if Adopted:** Anticipated construction cost impact from the code change if it is adopted in the FBC-EC. This is usually a decrease in construction cost, increase construction cost, or none. "None" means the code change has no or negligible impact on construction cost.

### References:

IECC-2021. 2021 International Energy Conservation Code. ISBN: 978-1-60983-961-1 (Soft-cover edition). International Code Council, Inc. January 2021.

IECC-2018. 2018 International Energy Conservation Code. ISBN: 978-1-60983-749-5 (Soft-cover edition). International Code Council, Inc. August 2017.

*Complete Revision History to the 2021 I-Codes*. 2020. International Code Council, Inc.

<http://shop.iccsafe.org/codes/2018-international-codes-and-references/2018-international-building-code-and-references/complete-revision-history-to-the-2018-i-codes-successful-changes-and-public-comments-pdf-download.html>.

**Table A: Commercial Code Change Summary for 7<sup>th</sup> Edition (2020) Florida Energy Code vs. 2021 IECC**

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
<b>Chapter C1: Scope and Administration</b>					
C102.1 General	CE09-19 Part I CE10-19 Part I	Adds text “energy conservation” for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C103.2 Information on construction documents	CE13-19 Part I	Adds “Compliance Path” to the requirements included in the construction document	Same as change between 2018 IECC and 2021 IECC	None	None
C103.2 Information on construction documents	CE98-19	Modifies the text in item 12 as “ <i>Air barrier and air sealing details, including the location of the air barrier.</i> ”	Same as change between 2018 IECC and 2021 IECC.	None	None
C102.1.1 Above code programs	CE42-19 Part I	Above code programs must meet the requirements listed in the new Table C407.2.	Same as change between 2018 IECC and 2021 IECC	None	None
<b>Chapter C2: Definitions</b>					
C202 Biogas	CE21-19	Added new definition for <i>Biogas</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Biomass	CE21-19	Added new definition for <i>Biomass</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
C202 On-Site Renewable Energy	CE21-19	Modified an existing definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Demand Recirculation Water System	CE22-19	Modified an existing definition to make it consistent with IPC definition for <i>Demand Recirculation Water System</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Direct Digital Control	CE26-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Networked Guestroom Control System	CE29-19 CE135-19	Modifies text for clarification of <i>Networked Guestroom Control System</i> definition.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C202 On-Site Renewable Energy	CE31-19	Modifies definition of <i>On-site renewable energy</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Renewable Energy Resources	CE31-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Wall, Above Grade	CE35-19	Adds clarification to an existing definition for <i>Wall, Above Grade</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Visible Transmittance, Annual [VT <sub>annual</sub> ]	CE39-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Greenhouse	CE56-19	Modifies an existing definition. Adds that <i>Greenhouses</i> are those that are erected for a period of 180 days or more.	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Internal Curtain System	CE56-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Vegetative Roof	CE83-19	Adds new definition for " <i>Vegetative Roof</i> ".	Same as change between 2018 IECC and 2021 IECC.	None	None
C202 Testing Unit Enclosure Area	CE96-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Computer Room	CE108-19	Revises <i>Computer Room</i> definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Data Center	CE108-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Data Center Systems	CE108-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Information Technology Equipment (ITE)	CE108-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Fault Detection and Diagnostics (FDD) System	CE111-19 CE239-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Enthalpy Recovery Ratio	CE133-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C202 Fan Nameplate Electrical Input Power	CE136-19 CE139-19	Adds new definition	This definition already exists in the 2020 FBC-EC.	None	None
C202 Fan, Embedded Fan Array Fan Energy Index (FEI) Fan System Electrical Input Power	CE139-19	Adds new definitions	These definitions already exist in the 2020 FBC-EC.	None	None
C202 Large-Diameter Ceiling Fan	CE141-19	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 Thermal Distribution Efficiency (TDE)	CE151-19 Part I	Adds new definition	Same as change between 2018 IECC and 2021 IECC	None	None
C202 General Lighting	CE161-19	Revises general lighting definition	Same as change between 2018 IECC and 2021 IECC	None	None
<b>Chapter C3: General Requirements</b>					
C301.1 General	CE36-19	Updated climate zones classifications in Table C301.1. Some counties were re-classified based on updated climate data.	Same as change between 2018 IECC and 2021 IECC	None	None
C301.3 Climate Zone Definitions	CE36-19	Replaces sub-section title for C303.2 from “ <i>International Climate Zone</i> ” to “ <i>Climate Zone Definitions</i> ”, expanded the climate zones classification to 0-8 from 1-8 and updates the equations in Table C301.3(1) for climate zone determination for locations not listed in Table C301.1	Same as change between 2018 IECC and 2021 IECC. In Florida, some counties (e.g., Palm Beach) moved from the climate zones 2A to 1A, and this may reduce the building envelope stringency.	Reduces stringency	Slightly decrease for some counties in Florida

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C303.1.3 Fenestration product rating	CE39-19	Revises the code that for Tubular Daylighting Devices, VT <sub>annual</sub> must be measured and rated in accordance with NFRC 203.  Adds new referenced standard: NFRC 203 – 2017: Procedure for Determining Translucent Fenestration Product Visible Transmittance at Normal Incidence	Same as change between 2018 IECC and 2021 IECC	None	None
C303.1.2 Insulation mark installation	CE40-19 Part I	Revises the section that insulation materials that are installed without an observable manufacturer's R-value mark, such as blown or draped products, an insulation certificate complying with Section C303.1.1 must be placed after installation by the installer, in a clearly visible location within the building.	Same as change between 2018 IECC and 2021 IECC	None	None
<b>Chapter C4: Commercial Energy Efficiency</b>					
C402.4.2 Minimum skylight fenestration area	CE39-19	Adds alternative compliance options for minimum skylight area compliance requirements: (1) Adds an alternative compliance for toplit daylight zone of not less than 3% using <i>VT<sub>annual</sub> of not less than 0.26</i> , as determined in accordance with Section C303.1.3 (2) Adds an alternative compliance for a minimum skylight effective aperture determined in accordance with Equation 4-4 not less than 0.66% using a Tubular Daylighting Device's VT <sub>annual</sub> rating. Also the revision requires that well factor of	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		1.0 for Tubular Daylighting Devices with VT annual ratings.			
C402.4.2 Minimum skylight fenestration area	CE89-19	Replaces text “ <i>sidelight</i> ” with “ <i>sidelit</i> ” in exception item 5.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.4.2 Minimum skylight fenestration area	CE91-19	Editorial changes for clarification.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.4.2 Minimum skylight fenestration area	CE92-19	Adds new exception item 6 for storm shelters. <i>Spaces designed as storm shelters must complying with ICC 500.</i> This exempts storm shelters from skylights requirement.  Adds new referenced standard: ICC 500: ICC/NSSA Standard for the Design and Construction of Storm Shelters.	Same as change between 2018 IECC and 2021 IECC	None	Decrease
C402.4.2.2 Haze Factor	CE39-19	Haze factor greater than 90% requirement exception revised to apply to tubular daylighting devices or when optical diffuser components are used.	Same as change between 2018 IECC and 2021 IECC	None	None
C401.2 Application	CE41-19	Edits commercial buildings compliance paths description and adds new sub-sections C401.2.1 and C401.2.2 for clarity.	Same as change between 2018 IECC and 2021 IECC	None	None
C401.2 Application	CE42-19 Part I	Editorial changes	Same as change between 2018 IECC and 2021 IECC	None	None
C401.2.1 International Energy Conservation Code	CE41-19	Adds new sub-section C401.2.1. Commercial buildings must comply with one of the following: 1. Prescriptive Compliance. The Prescriptive Compliance Option requires compliance with Sections C402 through C406, and C408.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		2. Total Building Performance. The Total Building Performance Option requires compliance with Section C407. Adds new exception: Additions, alterations, repairs and changes of occupancy to existing buildings complying with Chapter 5.			
C401.2.2 ASHRAE 90.1.	CE41-19	Adds new sub-section C401.2.2. Commercial buildings must comply with the requirements of ANSI/ASHRAE/IESNA 90.1	Same as change between 2018 IECC and 2021 IECC	None	None
C402.1 General	CE41-19	Updated referenced code section	Same as change between 2018 IECC and 2021 IECC	None	None
C407.2 Mandatory requirements	CE41-19	Updated referenced code section	Same as change between 2018 IECC and 2021 IECC	None	None
C407.3 Performance-based compliance	CE41-19	Updated referenced code section	Same as change between 2018 IECC and 2021 IECC	None	None
C407.2 Mandatory requirements	CE42-19 Part I CE45-19	Re-organizes the section by combining with section C407.3, adds a compliance requirement to the list in a new table C407.2, and adds a provision that total building performance method requires that the annual energy cost less than or equal to 85% of the annual energy cost of the <i>standard reference design</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
Table C407.2 Requirements for Total Building Performance	CE42-19 Part I	Adds new Table C407.2 that summarizes total building performance compliance path requirements	Same as change between 2018 IECC and 2021 IECC	None	None
C407.3 Documentation		Re-numbers Section C407.4	Same as change between 2018 IECC and 2021 IECC	None	None
C407.3.1 Compliance report		Re-numbers Section C407.4.1	Same as change between 2018 IECC and 2021 IECC	None	None
C407.3.2 Additional documentation		Re-numbers Section C407.4.2	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C402.1 General	CE42-19 Part I	Removes “Prescriptive” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.2 Specific building thermal envelope insulation requirements	CE42-19 Part I	Removes “Prescriptive” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.4 Fenestration	CE42-19 Part I	Removes “Prescriptive” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.5 Economizers	CE42-19 Part I	Removes “Prescriptive” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC  C403.3 Economizers	None	None
C402.5 Air leakage—thermal envelope	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.2 System design	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC  C403.2 Provisions applicable to all mechanical systems	None	None
C403.2.1 Zone isolation required	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.4.4 and it is not labeled mandatory.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C403.2.2 Ventilation	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.6 Ventilation.	None	None
C403.3 Heating and cooling equipment efficiencies	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.	None	None
C403.3.1 Equipment sizing	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.2.	None	None
C403.3.2 HVAC equipment performance requirements	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.3.	None	None
C403.3.2.1 Water-cooled centrifugal chilling packages	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.3.1.	None	None
C403.4 Heating and cooling system controls	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.	None	None
C403.4.1 Thermostatic controls	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.1.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C403.4.1.1 Heat pump supplementary heat	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.1.1.	None	None
C403.4.1.2 Deadband	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.1.2.	None	None
C403.4.1.3 Setpoint overlap restriction	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.1.3.	None	None
C403.4.1.4 Heated or cooled vestibules	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.4.2.1 Thermostatic setback	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.2.1.	None	None
C403.4.2.2 Automatic setback and shutdown	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.2.2.	None	None
C403.4.2.3 Automatic start and stop	CE42-19 Part I CE120-19	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach. Revises the code such that automatic stop controls must be provided for each	The 2020 FBC-EC already has HVAC automatic stop capability requirement. The 2020 FBC-EC Section is C403.2.4.2.3.	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		HVAC system with direct digital control of individual zones.			
C403.5.5 Economizer fault detection and diagnostics	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.4.7. This section is not labeled mandatory.	None	None
C403.7.1 Demand control ventilation	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.6.1. This section is not labeled mandatory.	None	None
C403.7.2 Enclosed parking garage ventilation controls	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.6.2. This section is not labeled mandatory.	None	None
C403.7.3 Ventilation air heating control	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC does not have equivalent Section.	None	None
C403.7.4 Energy recovery ventilation systems	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.7. This section is not labeled mandatory.	None	None
C403.7.5 Kitchen exhaust systems	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.8. This section is not labeled mandatory.	None	None
C403.7.6 Automatic control of HVAC systems serving guestrooms	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.4.8. This section is not labeled mandatory.	None	None

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C403.7.7 Shutoff dampers	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.4.3. This section is not labeled mandatory.	None	None
C403.8.1 Allowable fan horsepower	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.12.1. This section is not labeled mandatory.	None	None
C403.8.2 Motor nameplate horsepower	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.12.2. This section is not labeled mandatory.	None	None
C403.8.3 Fan efficiency	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.12.3. This section is not mandatory.	None	None
C403.8.4 Fractional hp fan motors	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.12.4. This section is not labeled mandatory.	None	None
C403.11.1 Walk-in coolers, walk-in freezers, refrigerated warehouse coolers and refrigerated warehouse freezers	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.14.1. This section is not labeled mandatory.	None	None
C403.11.2 Walk-in coolers and walk-in freezers	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.14.2. This section is not labeled mandatory.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C403.11.2.1 Performance standards	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. This sub-section does not exist.	None	None
C403.10.3 Refrigerated display cases		Deleted.	This section does not exist in the 2020 FBC-EC.	None	None
C403.12.1 Duct and plenum insulation and sealing	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.9.	None	None
C403.12.2 Duct construction	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.9.2. This section is not labeled mandatory.	None	None
C403.12.2.1 Low-pressure duct systems	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	See Table C403.2.9.2. This provision is not labeled mandatory.	None	None
C403.12.2.2 Medium-pressure duct systems	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	See Table C403.2.9.2. This provision is not labeled mandatory.	None	None
C403.12.2.3 High-pressure duct systems	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	See Table C403.2.9.2. This provision is not labeled mandatory.	None	None
C403.12.3 Piping insulation	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and	The 2020 FBC-EC Section is C403.2.10. This section is not labeled mandatory.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
		“prescriptive” section labels in favor of a tabular approach.			
C403.12.3.1 Protection of piping insulation	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	The 2020 FBC-EC Section is C403.2.10.1. This section is not labeled mandatory.	None	None
C403.13 Mechanical systems located outside of the building thermal envelope	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	This Section does not exist in the 2020 FBC-EC.	None	None
Section C404 Service Water Heating	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None
C404.8 Energy consumption of pools and permanent spas	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C404.9.	None	None
C404.9 Energy consumption of portable spas	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C404.10.	None	None
C405.1 General	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2 Lighting controls	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C405.3 Interior lighting power requirements	CE42-19 Part I	Removes “Prescriptive” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC.	None	None
C405.5 Exterior lighting power requirements	CE42-19 Part I	Renumbers Section C405.4. Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.4.	None	None
C405.5.3 Gas lighting	CE42-19 Part I	Renumbers Section C405.4.3. Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.4.3.	None	None
C405.5 Dwelling electrical meter	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. This is not a standalone section in the 2020 FBC-EC. It is covered in Section C405.5.2.	None	None
C405.6 Electrical transformers	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.6.	None	None
C405.7 Electric motors	CE42-19 Part I	Removes “Mandatory” from section title as part of formatting change that removes “mandatory” and “prescriptive” section labels in favor of a tabular approach.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.7.	None	None
C401.2 Application	CE44-19 CE45-19 CE48-19	Adds a provision that dwelling units and sleeping units in Group R-2 buildings without systems serving multiple units must be in compliance with the prescriptive method provided they comply with Section R406.	Same as change between 2018 IECC and 2021 IECC.	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		<p>Moves the text “The building energy cost shall be equal to or less than 85 percent of the standard reference design building” to section C407.2.</p> <p>Moves lists of mandatory code section to Table C407.2 to avoid redundancy and simplify the code.</p> <p>Updates referenced standard: ANSI/RESNET/ICC 301—2019: Standard for the Calculation and Labeling of the Energy Performance of Dwelling and Sleeping Units using an Energy Rating Index.</p>			
	CE49-19	Disapproved.	Same as change between 2018 IECC and 2021 IECC	None	None
C401.3 Thermal envelope certificate	CE55-19	Adds a new mandatory section C401.3 that requires thermal envelope certificate labeling for R-value of envelope insulations, fenestrations <i>U</i> -factor and SHGC values, and envelope air leakage testing performed.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.1.1 Low-energy buildings and greenhouses	CE56-19	Modifies the title by adding “Greenhouses”. Greenhouses are still exempted if they are low energy use. Moves exception item #3 to a new subsection C402.1.1.1.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.1.1.1 Greenhouses	CE56-19	Adds new section. This section exempts Greenhouses that are mechanically heated or cooled are exempted provided the building envelope requirements meet certain requirements. Adds new Table C402.1.1.1. Unconditioned Greenhouses and low energy	Same as change between 2018 IECC and 2021 IECC	Decreases	Increases

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		greenhouses that meet section C402.1.1.1 are exempted.			
C402.1.2 Equipment buildings	CE58-19	Revises the section that separate buildings floor area limit for thermal envelope requirements increases from 500 to 1,200 ft <sup>2</sup> . Replaces the text “electronic” with “electric” to avoid confusion. This change relaxes the stringency of thermal envelope requirement for some space types.	Same as change between 2018 IECC and 2021 IECC	None	Decrease
C402.1.3 Insulation component <i>R</i> -value-based method	CE60-19	Revises the code to clarify how <i>R</i> -values of multiple layers of cavity and continuous insulations is determined.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, <i>R</i> -value Method	CE61-19	Increases insulation <i>R</i> -value for metal buildings and attics in climate zones 4 through 8.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE61-19	Decreases <i>U</i> -Factor of roofs in metal buildings, and attic and other in climate zones 1 and 4 through 8. Increases the stringency for metal buildings <i>U</i> -Factor requirement.	Same as change between 2018 IECC and 2021 IECC. Decreases the roof <i>U</i> -Factor of metal buildings to U-0.035 from U-0.044 for climate zone 1 to make it consistent with <i>R</i> -value in Table C402.1.3. No cost impact on FBC-EC.	Decrease	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE73-19	Corrects roofs <i>U</i> -Factor for metal buildings in climate zone 1. This change makes the roof assembly <i>U</i> -Factor consistent with roof insulation <i>R</i> -Value in Table C402.1.3. See code change CE61-19 as well.	Same as change between 2018 IECC and 2021 IECC.	Decrease	None
Table C402.1.3 Opaque Thermal Envelope Insulation	CE63-19	Increases insulation <i>R</i> -value of above grade walls in climate zones 4 through 8 for metal buildings and metal framed	Same as change between 2018 IECC and 2021 IECC but the	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
Component Minimum Requirements, <i>R</i> -value Method		walls. This change matches ASHRAE Std. 90.1-2016.	change does not impact FBC-EC.		
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE63-19	Decreases <i>U</i> -Factor for above grade walls in climate zones 4 through 8 to match the increased R-values for metal buildings and metal framed walls. Also corrected <i>U</i> -Factor of mass walls in climate zone 8.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, <i>R</i> -value Method	CE64-19	Increases insulation R-value for below grade walls in climate zones 4 through 8. This change matches ASHRAE Std. 90.1-2016.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
C402.1.3 Insulation component <i>R</i> -value-based method	CE60-19	Revises the code to clarify how R-values of multiple layers of cavity and continuous insulations is determined.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE64-19	Decreases <i>U</i> -Factor for below grade walls in climate zones 4 through 8 to match the increased R-value.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, <i>R</i> -value Method	CE65-19	Replaces the “NR” to R-13 insulation R-value for Joist/Frame floors in climate zones 1. This change corrects errors in the table and makes the R-value consistent with <i>U</i> -Factor in Table C402.1.4. No impact on construction cost.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum	CE65-19	No change to the <i>U</i> -Factor for floors for all climate zones.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
Requirements, <i>U</i> -Factor Method					
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE66-19	Decreases <i>U</i> -Factor for mass and Joist/Frame floors in climate zones 3 through 8.  Also removes redundant foot note “f: Steel floor joist systems shall be insulated to R-38” as all framed floors are required to be insulated to R-38.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, <i>R</i> -value Method	CE67-19	Edited insulation R-value application for slab-on-grade floors in all climate zones. This change adds clarification to the original intent how the insulation coverage is applied and makes the R-value consistent with <i>F</i> -Factor. No change on stringency.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE67-19	No change to the <i>F</i> -Factor for slab-on-grade floors for all climate zones.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, <i>R</i> -value Method	CE68-19	Increases insulation R-value and depth of insulation for unheated slab-on-grade floors in climate zones 3 through 6. This change matches to ASHRAE Std. 90.1-2016.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE68-19	Decreases <i>F</i> -Factor for unheated slab-on-grade floors in climate zones 3 through 6 to match the increased R-values in Table C402.13.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, <i>R</i> -value Method	CE69-19	Increases insulation <i>R</i> -value and depth of insulation for unheated slab-on-grade floors in climate zones 7 and 8 to match the corresponding <i>F</i> -Factors in Table C402.1.4. This change matches to ASHRAE Std. 90.1-2016.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE69-19	Corrects the <i>F</i> -Factor for unheated slab-on-grade floors in climate zones 7 and 8 to match the corresponding improved <i>R</i> -values and insulation depth.	Same as change between 2018 IECC and 2021 IECC but the change does not impact FBC-EC.	None	None
Table C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, <i>R</i> -value Method	CE70-19	Deletes the <i>R</i> -value requirements for non-swinging opaque doors in Table C402.1.3 and replaces with equivalent <i>U</i> -factor in Table C402.1.4.	Same as change between 2018 IECC and 2021 IECC. The change impact FBC-EC.	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE70-19	Reduces <i>U</i> -Factor for opaque swinging doors in climate zones 1 through 4.  Adds a new 0.31 <i>U</i> -factor requirement for non-swinging opaque doors for all climate zones in Table C402.1.4.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, <i>U</i> -Factor Method	CE70-19	Adds new footnote <i>h</i> : Swinging doors <i>U</i> -factor must be determined in accordance with NFRC-100.	The 2020 FBC-EC already has this provision.	None	None
C402.4.5 Doors	CE70-19	Adds clarification that opaque doors must be treated as part of gross area of above-grade wall and comply with above-grade wall thermal envelope requirement.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C402.5.1 Opaque swinging doors	CE70-19	Adds new section that opaque swinging doors must comply with <i>U</i> -factor in Table C402.1.4.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C402.4.5.2 Nonswinging Doors	CE70-19	Adds new section that opaque non-swinging doors with glazing area between 14% and 25% of the total door area must have an assembly <i>U</i> -factor less than or equal to 0.44 in Climate Zones 0 through 6 and less than or equal to 0.36 in Climate Zones 7 and 8.	The 2020 FBC-EC already has this provision.	None	None
C402.1.4 Assembly <i>U</i> -factor, <i>C</i> -factor or <i>F</i> -factor-based method	CE71-19	Adds new sub-sections: C402.1.4.1, C402.1.4.1.1, C402.1.4.1.2 and C402.1.4.1.3.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.1.4.1 Roof/Ceiling Assembly	CE71-19	Adds new section. The maximum, roof/ceiling assembly <i>U</i> -factor, must not exceed the values specified in Table C402.1.4 based on construction materials used in the roof/ceiling assembly.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.1.4.1.1 Tapered, above-deck insulation based on thickness	CE71-19	Adds new section. Clarifies how the <i>U</i> -factor calculation is performed for sloped roof assembly.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.1.4.1.2 Suspended ceilings	CE71-19	Adds new section. Insulation installed on suspended ceilings having removable ceiling tiles must not be considered part of the assembly <i>U</i> -factor of the roof/ceiling construction.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.1.4.1.3 Joints staggered	CE71-19	Adds new section. Continuous insulation board must be installed in not less than two layers and the edge joints between each layer of insulation must be staggered, except where insulation tapers to the roof deck at a gutter edge, roof drain or scupper.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C402.2.1 Roof assembly	CE71-19	Removes some code language, adds new sub-sections C402.2.1.1, C402.2.1.2, C402.2.1.3 and C402.2.1.4 and re-numbers section C402.2.1.1. This change is clarification.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C402.2.2.	None	None
C402.2.1.1 Tapered, above-deck insulation based on thickness	CE71-19	Adds new section. Roof/ceiling assembly R-value calculation; the sloped roof insulation R-value calculation must use the average thickness in inches along with the material R-value-per-inch solely for R-value compliance as prescribed in Section C402.1.3	Same as change between 2018 IECC and 2021 IECC	None	None
C402.2.1.2 Minimum thickness, lowest point	CE71-19	Adds new section. The minimum thickness of above-deck roof insulation at its lowest point, gutter edge, roof drain or scupper, must not be less than 1 inch.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.2.1.3 Suspended ceilings	CE71-19	Adds new section. Insulation installed on suspended ceilings having removable ceiling tiles must not be considered part of the minimum thermal resistance (R-value) of roof insulation in roof/ceiling construction.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.2.1.4 Joints staggered	CE71-19	Adds new section. Continuous insulation board must be installed in not less than two layers and the edge joints between each layer of insulation must be staggered, except where insulation tapers to the roof deck at a gutter edge, roof drain or scupper.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.2.1.5 Skylight curbs	CE71-19	Re-numbered section C402.2.1.1.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum	CE74-19	Corrects <i>U</i> -Factor for above grade mass wall in climate zones 8. This change makes the mass wall assembly <i>U</i> -	Same as change between 2018 IECC and 2021 IECC. This change does not impact FBC-EC.	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
Requirements, U-Factor Method		Factor consistent with mass wall insulation R-Value in Table C402.1.3.			
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, U-Factor Method	CE75-19	Corrects <i>U</i> -Factor for above grade wood frame wall in climate zone 5 and metal framed above grade wall in climate zone 7. This change makes the wall assembly <i>U</i> -Factor consistent with wall insulation R-Values in Table C402.1.3.	Same as change between 2018 IECC and 2021 IECC. This change does not impact FBC-EC.	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, U-Factor Method	CE76-19	Corrects <i>F</i> -Factor for slab-on-grade heated slab floors in all climate zones. This change makes single <i>F</i> -Factor that represents combined impact of the perimeter and full slab insulation consistent with <i>F</i> -Factor values in ASHRAE 90.1-2016 standard. Also removes footnote “ <i>f</i> ”.	Same as change between 2018 IECC and 2021 IECC. This change does not impact FBC-EC.	None	None
Table C402.1.4 Opaque Thermal Envelope Assembly Maximum Requirements, U-Factor Method	CE77-19	Adds new footnote <i>i</i> : Garage doors having a single row of fenestration must have an assembly <i>U</i> -Factor less than or equal to 0.44 in Climate Zones 1 through 6 and less than or equal to 0.36 in Climate Zones 7 and 8, provided the glazing area is between 14% and 25% of the total door area.	The 2020 FBC-EC already has this provision.	None	None
C402.2.4 Slabs-on-grade	CE79-19	Renames code section C402.2.4 Slabs-on-grade, designated it “Prescriptive”, edits the section text, and adds new sub-section C402.2.4.1 by moving the exception.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C402.2.5.	None	None
C402.2.4.1 Insulation installation	CE79-19	Adds new section that describes the insulation installation requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
C401.2 Application	CE80-19	Edits section C402.2.7 Airspaces to clarify the provision and updates referenced code section.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C402.3 Roof solar reflectance and thermal emittance	CE82-19 CE83-19	Replaces text “ <i>Roof gardens or landscaped</i> ” with “ <i>Vegetative roofs or landscaped roofs</i> ” in tem 1.3.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C402.4 Building Envelope Fenestration Maximum <i>U</i> -Factor and SHGC Requirements	CE84-19 CE85-19	Reduces <i>U</i> -Factor of vertical fenestration in all climate zones. Reduces SHGC values of vertical fenestration in climate zones 1, 6, 7, and 8. Reduces <i>U</i> -Factor and SHGC values of skylights in climate zones 1, 2, 3, 7 and 8. These changes align vertical fenestrations and skylights <i>U</i> -Factor and SHGC values with ASHRAE Standard 90.1-2019. Very small or no construction cost increase.	Same as change between 2018 IECC and 2021 IECC	Decrease	Slight Increase
Table C402.4 Building Envelope Fenestration Maximum <i>U</i> -Factor and SHGC Requirements	CE87-19	Removes fenestration orientation and replaces it with “fixed” and “Operable” classification and reduces the SHGC values requirements for vertical fenestration in climate zones 1, 2, 3, 7, and 8 to align with ASHRAE Standard 90.1-2019. Also deleted footnote “a”. Very small or no construction cost increase.	Same as change between 2018 IECC and 2021 IECC	Decrease	Slight Increase
C402.4.1.2 Increased skylight area with daylight responsive controls	CE89-19	Replaces text “ <i>toplit zones</i> ” with “ <i>toplit daylight zones</i> ”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C402.4.1.1.	None	None
C402.4.4 Daylight zones	CE89-19	Replaces text “ <i>toplit zones</i> ” with “ <i>toplit daylight zones</i> ” and “ <i>sidelit zones</i> ” with “ <i>sidelit daylight zones</i> ”.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.4 Daylight-responsive controls	CE89-19	Re-numbers section, replaces text “ <i>toplit zones</i> ” with “ <i>toplit daylight zones</i> ” and “ <i>sidelit zones</i> ” with “ <i>sidelit daylight zones</i> ”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.2.3.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C405.2.4.1 Daylight-responsive control function	CE89-19	Re-numbers section and replaces text “toplit zones” with “toplit daylight zones” and “sidelit zones” with “sidelit daylight zones”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.2.3.1.	None	None
C405.2.4.2 Sidelit daylight zone	CE89-19	Re-numbers and renames section title, and replaces text “sidelit zones” with “sidelit daylight zones”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.2.3.2.	None	None
C405.2.4.3 Toplit daylight zone	CE89-19	Renames Section title and replaces text “toplit zones” with “toplit daylight zones”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C405.2.3.3.	None	None
C402.4 Fenestration	CE90-19	Editorial changes for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C402.4.1.1 Increased vertical fenestration area with daylight responsive controls	CE90-19	Editorial changes for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C402.4.1.2 Increased skylight area with daylight responsive controls	CE90-19	Editorial changes for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C402.4.2.1 Lighting controls in toplit daylight zones	CE90-19	Editorial changes for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C402.4.1.2 Increased skylight area with daylight responsive controls	CE91-19	Editorial changes for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5 Air leakage—thermal envelope	CE96-19	Editorial changes for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.1 Air barriers	CE96-19	Editorial changes for clarification	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.1.2 Air barrier compliance	CE96-19 CE97-19	Removes the text “options” from the title and re-writes the continuous air	Same as change between 2018 IECC and 2021 IECC. For	Decrease	Increase

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		<p>barrier testing requirements for opaque building envelope and provides three compliance options: (1) Dwelling and sleeping units buildings or portions the building must meet Section C402.5.2. Adds new exception: buildings in Climate Zones 2B, 3C, and 5C.</p> <p>(2) Other than dwelling and sleeping units buildings or portions of buildings must meet testing requirements of Section C402.5.3. Adds three new exceptions:</p> <ol style="list-style-type: none"> <li>1. Buildings in Climate Zones 2B, 3B, 3C, and 5C.</li> <li>2. Buildings larger than 5000 ft<sup>2</sup> floor area in Climate Zones 0B, 1, 2A, 4B, and 4C.</li> <li>3. Buildings between 5000 and 50,000 ft<sup>2</sup> floor area in Climate Zones 0A, 3A and 5B.</li> </ol> <p>(3) Buildings or portions of buildings that do not complete air barrier testing must meet Section C402.5.1.3 Material, or C402.5.1.4 Assembly in addition to Section C402.5.1.5 Building envelope performance verification requirements.</p>	<p>FBC-EC, buildings of other than group R and group I occupancy and larger than 5000 ft<sup>2</sup> floor area in climate zone 2A are exempted from envelope air leakage testing requirement.</p>		
C402.5.1.3 Materials	CE96-19	Re-numbers section C402.5.1.2.1.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.1.4 Assemblies	CE96-19	Re-numbers section C402.5.1.2.2.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.1.4 Assemblies	CE101-19	<p>Re-numbers section C402.5.1.2.2, edits for clarification and adds reference to new standard, ASTM D8052 for low slope roofs.</p> <p>Adds new referenced standard:</p>	<p>Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C402.5.1.2.2.</p>	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		ASTM D8052/D8052M-2017: Standard Test Method for Quantification of Air Leakage in Low-Sloped Membrane Roof Assemblies.			
C402.5.2 Dwelling and sleeping unit enclosure testing	CE96-19	Adds new section C402.5.2. This new section requires building thermal envelope must be tested in accordance with ASTM E779, ANSI/RESNET/ICC 380, ASTM E1827 or an equivalent method approved by the code official and the measured air leakage must not exceed 0.30 cfm/ft <sup>2</sup> of test unit enclosure area at 50 Pa pressure difference. For buildings that have fewer than eight testing units, each unit must be tested. For buildings with 8 units or higher, maximum of 7 units or 20% must be tested.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C402.5 Air leakage—thermal envelope	CE97-19	Editorial changes for clarification and updated reference sections.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.1 Air barriers	CE97-19 CE99-19	Edits for clarification and adds reference to a new code Section C402.5.1.3.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.3 Building thermal envelope testing	CE97-19	Adds new section C402.5.3.  The building thermal envelope must be tested in accordance with ASTM E 779, ANSI/RESNET/ICC 380, or ASTM E1827 or an equivalent method approved by the code official.  Alternatively, sampled portions of the building must be tested and the measured air leakages must be area-weighted by the surface areas of the building envelope in each portion and	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		the air leakage must not exceed 0.40 cfm/ft <sup>2</sup> of the building thermal envelope area at 75 Pa pressure difference. When air leakage measured is between 0.40 and 0.60 cfm/ft <sup>2</sup> additional diagnostic test and air sealing is required.			
C402.5 Air leakage—thermal envelope	CE98-19	Adds new referenced standard ASTM E3158 as an alternative method for envelope air leakage testing.  ASTM E3158-18: Test Method for Measuring the Air Leakage Rate of a Large or Multizone Building.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.1.5 Building envelope performance verification	CE99-19	Adds new section C402.5.1.5. Installation of the continuous air barrier must be verified by the code official, a registered design professional or approved agency.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.1.3 Materials	CE102-19	Re-numbers section C402.5.1.2.1 and removes the requirement that single-ply roof membranes be “ <i>fully adhered</i> ”. This change makes the code consistent with ASHRAE Standard 90.1-2016.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C402.5.1.2.1.	None	Decrease
C402.5.11 Operable openings interlocking	CE106-19	Adds new mandatory section. Occupancies that has operable opening larger than 40 ft <sup>2</sup> must have the openings interlocked with the heating and cooling system to setback the cooling setpoint to 80°F or heating to 70°F when the operable opening is open in the exterior wall of the building.	Same as change between 2018 IECC and 2021 IECC	None	None
C402.5.11.1 Operable controls	CE106-19	Adds new mandatory sub-section C402.5.11.1 Operable controls that must comply with Section C403.13.	Same as change between 2018 IECC and 2021 IECC. But the 2020 FBC-EC does not have equivalent Section C403.13.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C403.13 Mechanical systems located outside of the building thermal envelope	CE106-19	Re-numbered section C403.12.	The 2020 FBC-EC does not have section C403.13 but has two of its sub-sections under C403.2.4.5 and C403.2.4.6. These sections may need to be re-organized under a new section in order to reference Section C403.13.	None	None
C403.1.1 Calculation of heating and cooling loads	CE107-19	Designates the section as mandatory.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.1 General	CE108-19	Revises the section such that data center systems are now exempt from requirements of Sections C403.4 and C403.5.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.1.2 Data Centers	CE108-19	Adds a new sub-section C403.1.2. Data center systems must comply with Sections 6 and 8 of ASHRAE 90.4 per new Tables C403.1.2(1) and C403.1.2(2).	Same as change between 2018 IECC and 2021 IECC	None	None
Table C403.1.2(1) Maximum Design Mechanical Load Component (Design MLC)	CE108-19	Adds new table that specifies the maximum design mechanical load component requirements for data center by climate zone.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C403.1.2(2) Maximum Annualized Mechanical Load Component (Annualized MLC)	CE108-19	Adds new table that specifies the maximum annualized mechanical load component requirements for data center by climate zone.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.1 General	CE108-19	Revises lighting system controls, the maximum lighting power for interior and exterior applications and electrical energy consumption code provisions to include transformers, uninterruptable	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		power supplies, motors and electrical power processing equipment in data center systems and must comply with Section 8 of ASHRAE 90.4 in addition to this code.			
Table C405.3.2(2) Interior Lighting Power Allowances: Space-by-Space Method	CE108-19	Revises the space-by-space interior lighting power density requirements of computer rooms to apply to data centers space type.	Same as change between 2018 IECC and 2021 IECC	None	None
ASHRAE 90.4-2016	CE108-19	Adds new referenced standard: ASHRAE 90.4-2016: Energy Standard for Data Centers.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.2 System design	CE111-19	Updates referenced code section; now mechanical systems must be designed to comply with Sections C403.2.1 through C403.2.3.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.2.3 Fault Detection and Diagnostics	CE111-19	Adds a new section C403.2.3. New buildings with an HVAC system serving a gross conditioned floor area of 100,000 ft <sup>2</sup> or larger must have a fault detection and diagnostics (FDD) system to monitor the HVAC system's performance and automatically identify faults. Requires permanently installed sensors, sample data every 15 minutes, and communicate faults and recommended repair remotely. R-1 and R-2 group buildings are exempted from this requirement.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C403.3.2 HVAC equipment performance requirements	CE113-19	Modifies HVAC equipment minimum efficiency requirements by adopting Table 6.8.1-1 through Table 6.8.1-19 from ASHRAE Standard 90.1-2019.  Introduces new efficiency metrics SEER2 and HSPF2 for unitary air	Partly the same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.3.  Some of the 2020 FBC-EC equipment efficiency tables are	Decreases for some equipment	Slightly increases for some existing equipment

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		<p>conditioners and heat pumps with capacity less than 65kBtu/h effective as of 01/01/2023.</p> <p>Increases minimum efficiency of selected equipment in Tables C403.3.2(1), C403.3.2(2), C403.3.2(4), C403.3.2(5), C403.3.2(6), C403.3.2(7) and C403.3.2(10).</p> <p>Deletes existing Tables C403.3.2(6) and C403.3.2(10).</p> <p>Adds new tables for Variable Refrigerant Flow (VRF) ACs C403.3.2(8), and VRF HPs C403.3.2(9), indoor pool dehumidifiers C403.3.2(11), DOAS units without energy recovery C403.3.2(12), DOAS units with energy recovery C403.3.2(13), water source HPs C403.3.2(14), HP and heat reclaim chiller packages C403.3.2(15), and ceiling-mounted CRACs C403.3.2(16) that were previously not covered in the IECC.</p> <p>Equipment must meet the minimum efficiency requirements of Tables C403.3.2(1) through C403.3.2(16). Federal minimum requirement.</p>	<p>equivalent, some of them already have higher efficiency requirements, and some have lower efficiency requirements.</p> <p>Adds six new tables that needs to be incorporated into 8<sup>th</sup> Edition of the FBCEC. These include: indoor pool dehumidifiers, DOAS units without energy recovery, DOAS units with energy recovery, water source HPs, HP and heat reclaim chiller packages, and ceiling-mounted CRACs.</p> <p>VRF ACs and VRF HPs in the 2020 FBCEC are Table C403.3.2(11).</p>		
C403.3.2.1 Water-cooled centrifugal chilling packages	CE113-19	Editorial changes and equipment minimum efficiency requirements reference changes to point to tables in Section C403.3.2.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.3.1.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C403.3.2.2 Positive displacement (air- and water-cooled) chilling packages	CE113-19	Equipment minimum efficiency requirements reference changes to point to tables in Section C403.3.2.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.3.2.	None	None
C403.5.5 Economizer fault detection and diagnostics	CE113-19	Equipment minimum efficiency requirements reference changes to point to tables in Section C403.3.2.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.7.	None	None
C403.10 Heat rejection equipment	CE113-19	Equipment minimum efficiency requirements reference changes to point to tables in Section C403.3.2.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.7.	None	None
Table C407.5.1(1) Specifications for the Standard Reference and Proposed Designs	CE113-19	Equipment minimum cooling and heating efficiency requirements in Table C407.5.1(1) now references tables in Section C403.3.2.	Same as change between 2018 IECC and 2021 IECC.	None	None
C408.2.3.1 Equipment	CE113-19	Equipment minimum efficiency requirements reference changes to point to tables in Section C403.3.2.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.3.3 Hot gas bypass limitation	CE114-19	Designates as “mandatory”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.4.6.	None	None
C403.3.4 Boiler turndown	CE114-19	Designates as “mandatory”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.4.2.5.	None	None
C403.4.1.1 Heat pump supplementary heat	CE116-19 Part I	Revises the code language; heat pumps supplementary electric resistance heat must have controls that limit supplemental heater operation to only those times when: the vapor compression cycle cannot meet the thermostat setting, the heat pump is in defrost mode, the vapor compression	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.1.1.	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		cycle malfunctions, or the thermostat malfunctions.			
C403.4.3.3.2 Heat rejection	CE121-19	Revises the section to use a separation heat exchanger to isolate closed-circuit cooling tower to allow shutdown the tower circulation pump. This change impacts climate zones 3 through 8.	Same as change between 2018 IECC and 2021 IECC but no impact on FBC-EC. The 2020 FBC-EC Section is C403.4.2.3.2.	None	None
C403.4.3.3.3 Two-position valve	CE122-19	Each hydronic heat pump on the hydronic system having a total pump system power exceeding 10 hp (7.5 kW) must have a two-position automatic valve interlocked to shut off the water flow when the compressor is off. This is clarification of exist requirement.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.4.2.3.3.	None	None
C403.5 Economizers	CE124-19	Adds a new exemption. VRF systems installed with a dedicated outdoor air system does not require air economizer.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.3.	None	None
C403.6.5 Supply-air temperature reset controls	CE125-19	Adds clarifications how the supply air temperature (SAT) reset is applied. The change allows controls that adjust the reset based on zone humidity in Climate Zones 0B, 1B, 2B, 3B, 3C and 4 through 8.  Revises existing exemptions: Systems in Climate Zones 0A, 1A, and 3A with less than 3000 cfm of design outside air. Adds two new exemptions: (1) Systems in Climate Zone 2A with less than 10,000 cfm of design outside air. (2) Systems in Climate Zones 0A, 1A, 2A, and 3A with not less than 80% outside air and employing exhaust	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.4.4.5.  The 3 <sup>rd</sup> exemption item referenced code section in 2020 FBC-EC is section C403.2.7 Energy recovery ventilation systems, instead of Section C403.7.4.  This code revision provides design Flexibility in Florida climate zones.	Decrease	Increase

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		air energy recovery complying with Section C403.7.4.			
C403.6.5.1 Dehumidification Control Interaction	CE125-19	Adds new section C403.6.5.1. In Climate Zones 0A, 1A, 2A, and 3A, the system design must allow supply air temperature <i>reset</i> while dehumidification is provided and if dehumidification <i>control</i> is active, air economizers must be locked out.	Same as change between 2018 IECC and 2021 IECC	None	None
C403.7.1 Demand control ventilation	CE127-19	Reduces the people occupancy density threshold from 25 to 15 people or greater per 1,000 ft <sup>2</sup> of floor area. Also demand control ventilation must be provided for all single-zone system required to comply with Sections C403.5 through C403.5.3.  In exceptions item 3, reduces the design outdoor airflow threshold from 1,200 to 750 cfm for multiple-zone systems. Also in exception item 4, the threshold for exemption changes from less than 1200 cfm to greater than 75% of the space design outdoor air flow rate is exhausted or used as transfer air.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.6.1.	Decrease	Increase
C403.7.1 Demand control ventilation	CE128-19	Revises the exemption items 4 and 5:  Exemption item 4 now applies to spaces with 75% of the design outdoor air is exhausted or used as transfer air.  Exemption item 5 used to apply to any space used for process load, now it applies to the following spaces types only: correctional cells, education laboratories, barber, beauty and nail salons, and bowling alley seating areas.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C403.7.2 Enclosed parking garage ventilation controls	CE129-19	Replaces the text “contaminant sensing devices” with “carbon monoxide and nitrogen dioxide detectors”.  Reduces the exhaust fan flow (CFM) threshold for enclosed parking garage to 8000 from 22,500 cfm and requires to use occupant sensors to activate the full required ventilation rate.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.6.2 Enclosed parking garage ventilation controls.	Decrease	Increase
C403.7.4 Energy Recovery Systems	CE133-19	Adds new section that replaces an existing code section C403.7.4 Energy recovery ventilation systems. Moves the existing section to the new subsection C403.7.4.2. The new code requires that Energy recovery ventilation systems must be provided as specified in either Section 403.7.4.1 or 403.7.4.2.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.7 Energy recovery ventilation systems.	None	None
C403.7.4.1 Nontransient dwelling units	CE133-19	Adds new prescriptive section. Requires exhaust air energy recovery system with an enthalpy recovery ratio of at least 50% and 60% for cooling and heating, respectively, in Nontransient dwelling units. Has exceptions depending climate zone and dwelling unit floor area.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C403.7.4.2 Spaces other than nontransient dwelling units	CE133-19	Renames title of section C403.7.4 with “Spaces other than nontransient dwelling units” and designated it “Mandatory”.  Removes the minimum heating heat recovery efficiency requirement for hot and warmer climate zones and the minimum cooling heat recover efficiency requirement for colder	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.7.	Decrease	Increase

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		climate zones in exemption items 5 and 6, respectively.			
C403.7.6 Automatic control of HVAC systems serving guestrooms	CE135-19	Replaces “occupancy status” with “rented and unrented status” to be consistent with modes of HVAC control requirements.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.8.	None	None
C403.7.6.1 Temperature setpoint controls	CE135-19	Revises guestroom controls must be provided on each HVAC system that are capable of and configured with three modes of temperature control: “occupied”, “rented and un-occupied”, and “unrented and un-occupied”.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.8.1.	None	None
C403.7.6.2 Ventilation controls	CE135-19	Reduces time-out period for unoccupied guestroom from 30 minutes to 20 minutes for consistency between HVAC and the lighting control in Section C405.2.1.1.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.4.8.2.	Decrease	None
C403.8.2 Motor nameplate horsepower	CE136-19	Edits to correct IP/SI conversion. Also updates the exemptions: Fans equipped with electronic speed control devices to vary the fan airflow as a function of load and a fan nameplate electrical input power of less than 0.89 kW are now exempted.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.12.2 Fan motor selection. Only part of the editorial changes apply.	None	None
C403.8.3 Fan efficiency	CE139-19	Replaces the fan efficiency grade (FEG) metric with Fan Energy Index (FEI), and updates the minimum fan efficiency requirements using FEI. Revises the code that the FEI must be calculated in accordance with a new standard AMCA 208 by an approved, independent testing laboratory and labeled by the manufacturer.  Adds new referenced standard: AMCA 208-18: Calculation of the Fan Energy Index	This code section is already up-to-date. This change has no impact on the 2020 FBC-EC. The 2020 FBC-EC Section is C403.2.12.3.	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C403.8.5 Low-capacity ventilation fans	CE140-19	Adds new code section for Mechanical ventilation system fans with motors less than 1/12 hp must meet the efficacy requirements of a new Table C403.8.5.	Same as change between 2018 IECC and 2021 IECC.	Decrease	Slightly increase depending on the product
Table C403.8.5 Low-Capacity Ventilation Fan Efficiency	CE140-19	Adds new Table C403.8.5 that contains the minimum efficiency requirements of low-capacity mechanical ventilation fans less than 1/12 horsepower.	Same as change between 2018 IECC and 2021 IECC.	None	None
C403.9 Large-diameter ceiling fans	CE141-19	Adds new code section. Large diameter ceiling fans must be tested and labeled in accordance with AMCA 230.  Adds new referenced standard: ANSI/AMCA 230-15: Laboratory Methods of Testing Air Circulating Fans for Rating and Certification.	Same as change between 2018 IECC and 2021 IECC.	None	None
C403.9.6 Heat recovery for space conditioning in healthcare facilities	CE143-19	Adds new code section. Where heating water is used for space heating, a condenser heat recovery system must be installed provided: (1) the building is 24-hours operating in-patient hospital, (2) the total design chilled water cooling capacity exceeds 3.6MBtu/h, (3) simultaneous heating and cooling occurs above 60°F outdoor air temperature, and (4) the required heat recovery <i>system</i> must have a cooling capacity that is not less than 7% of the total design chilled water capacity.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C402.1 General	CE144-19	Revises the code section that walk-in coolers, walk-in freezers, refrigerated warehouse coolers and refrigerated warehouse freezers now must comply with Section C403.11, instead of C403.10.1 or C403.10.2 for clarity.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.14.	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C403.11 Refrigeration equipment performance	CE144-19	Re-numbers the section. Adds new exception: Walk-in coolers and walk-in freezers regulated under federal law in accordance with Subpart R of 10 CFR 431.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.14 Refrigeration equipment performance.	None	None
C403.11 Refrigeration equipment performance	CE146-19	Re-numbers and revises the section to clarify code language, and deletes current tables C403.10.1(1) and C403.10.1(2), adds a new table C403.11.1 and updates the efficiencies to current federal minimum requirements.	The 2020 FBC-EC is already up-to-date. The 2020 FBC-EC Section is C403.2.14.	None	None
C403.11.1 Commercial refrigerators, freezers, refrigerator-freezers and refrigeration	CE146-19	Re-numbers the section, modifies the title, clarifies referenced code sections and standards, and updates tables to make them equivalent to ASHRAE 90.1-2019.  Adds new referenced standard: AHRI 1250-(I-P) 2014: Standard for Performance Rating in Walk-in Coolers and Freezers.	The 2020 FBC-EC is already up-to-date. The 2020 FBC-EC Section is C403.2.14.1.	None	None
Table C403.10.1(1) Minimum Efficiency Requirements: Commercial Refrigeration	CE146-19	Deletes table C403.10.1(1) with substitution.	The 2020 FBC-EC is already up-to-date	None	None
Table C403.10.1(2) Minimum Efficiency Requirements: Commercial Refrigerators and Freezers	CE146-19	Deletes table C403.10.1(2) with substitution.	The 2020 FBC-EC is already up-to-date	None	None

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Table C403.11.1 Minimum Efficiency Requirements: Commercial refrigerators, freezers, refrigerator-freezers and refrigeration	CE146-19	Adds a new table with updated efficiency values based on federal minimum requirements.	The 2020 FBC-EC is already up-to-date. The 2020 FBC-EC table number is C403.2.14.1(1).	None	None
C403.11.2 Walk-in coolers, walk-in freezers	CE149-19	Re-numbers the section, and revises walk-in cooler and walk-in freezer refrigeration systems, except for walk-in process cooling refrigeration systems as defined in U.S. 10 CFR 431.302, must meet the requirements of new Tables C403.11.2(1), C403.11.2(2), and C403.11.2(3).  Adds new referenced standards: AHRI 1250-(I-P) 2014: Standard for Performance Rating in Walk-in Coolers and Freezers.	The 2020 FBC-EC is already up-to-date. The 2020 FBC-EC Section is C403.2.14.2, and the corresponding tables are C403.2.14.2(1), C403.2.14.2(2) and C403.2.14.2(3)	None	None
Table C403.11.2(1) Walk-in Cooler and Freezer Display Door Efficiency Requirements	CE149-19	Updates Table C403.10.2.1(1).	The 2020 FBC-EC is already up-to-date. See Table C403.2.14.2(1).	None	None
Table C403.11.2(2) Walk-in Cooler and Freezer nondisplay Door Efficiency Requirements	CE149-19	Updates Table C403.10.2.1(2).	The 2020 FBC-EC is already up-to-date. See Table C403.2.14.2(2).	None	None
Table C403.11.2(3) Walk-in Cooler and Freezer Refrigeration	CE149-19	Updates Table C403.10.2.1 (3).	The 2020 FBC-EC is already up-to-date. See Table C403.2.14.2(3).	None	None

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System Efficiency Requirements					
C403.12.1 Duct and plenum insulation and sealing	CE151-19 Part I	Re-numbers the section, and revises the section that ducts located underground beneath buildings must be insulated as required in this section or have an equivalent thermal distribution efficiency. Requires that underground ducts utilizing the thermal distribution efficiency (TDE) method must be listed and labeled to indicate the R-Value equivalency.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.9.	None	None or slightly decrease (eliminates the need for insulation installation if a buried duct has equivalent TDE)
C403.12.2.3 High-pressure duct systems	CE152-19	Edits the last paragraph by removing the text “by the designer” to clarify the provider of duct testing documentation.	The 2020 FBC-EC does not need this code change. See Table C403.2.9.2	None	None
C403.12.3 Piping insulation	CE153-19	Re-numbers the section and adds radiant system piping to the piping insulation exemption list to avoid misinterpretation.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C403.2.10.	None	None
C404.2.1 High input service water-heating systems	CE156-19	Increases service hot water systems minimum efficiency to 92% from 90% for a singular piece of water-heating equipment that serves the entire building whose rated capacity is 1,000,000 Btu/h or larger. No change for minimum efficiency of multiple pieces of service hot water equipment requirement.	Same as change between 2018 IECC and 2021 IECC. The 2020 FBC-EC Section is C404.2.1.	Decrease	Increase
C404.5.2.1 Water volume determination	CE158-19	Revises the code language; water volume in the piping must be determined from the “Volume” column in Table C404.5.1 or from new Table C404.5.2.1.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C404.5.2.1 Internal Volume of Various Water Distribution Tubing	CE158-19	Adds new table C404.5.2.1 for determination of internal volume of piping.	Same as change between 2018 IECC and 2021 IECC	None	None

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C404.6.1 Circulation systems	CE159-19 Part I	Combines section C404.6.1 Circulation system and C404.7 Demand recirculation controls as the latter is a special case of the former. Moves section C404.7 Demand recirculation controls to new subsection C404.6.1.1. This change clarifies the requirements for heated water circulation and demand recirculation systems.	Same as change between 2018 IECC and 2021 IECC	None	None
C404.6.1.1 Demand recirculation controls	CE159-19 Part I	Adds new sub-section based on Section C404.7.	Same as change between 2018 IECC and 2021 IECC.	None	None
C404.8.1 Heaters	CE160-19 Part I	Re-numbers section C404.9.1.	Same as change between 2018 IECC and 2021 IECC.	None	None
C404.8.3 Covers	CE160-19 Part I	Re-numbers section C404.9.3 and editorial changes to clarify the language and align with other relevant codes.	The 2020 FBC-EC exempts pool cover requirement where more than 70% of the energy for heating, computed over an operating season, is from site-recovered energy such as from a heat pump or solar energy source. But requires editing to remove the test "site-recovered energy such as from".	None	None
C404.9 Portable spas	CE160-19 Part I	Re-numbers section C404.10 and modifies title of the section.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.1 General	CE161-19	Adds code language for clarification; general lighting must consist of all lighting when calculating the total connected interior lighting power in accordance with Section C405.3.1.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.3 Daylight-responsive controls	CE161-19	Daylight-responsive controls complying with Section C405.2.3.1 must be provided to control the general	Same as change between 2018 IECC and 2021 IECC	None	Decrease

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		lighting within daylight zones but not specific application lighting.			
C405.2.1.2 Occupant sensor control function in warehouses storage areas	CE162-19 CE166-19	Modifies the section title by adding the text “storage areas”. Also revises the code language to reduce inconsistency and application confusion as follows: (1) aisle ways lights must be controlled independent of other areas, (2) occupant sensor must automatically reduce lighting power at an unoccupied setpoint not more than 50% of the full power within 20 minutes after all occupants left, (3) lights not controlled by occupant sensor must be turned off by time-switch control according to Section C405.2.2.1, and (4) manual lighting control is required.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.1 General	CE163-19	Adds code language to clarify that general lighting must consist of all lighting when calculating the total connected interior lighting power in accordance with Section C405.3.1 and it must not require specific application controls in accordance with Section C405.2.4.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.1 Occupant sensor controls	CE163-19	Adds new exception; luminaires which are required to have specific application controls in accordance with Section C405.2.4.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.2 Time-switch controls	CE163-19	Re-numbers the exception items.  Adds new exception which says, luminaires that are required to have specific application controls in accordance with Section C405.2.4 are now exempted from time-switch controls requirement.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C405.2.5 Specific application controls	CE163-19	Re-numbers Section C405.2.4 and modifies by adding two new lighting specific application control requirements: (1) luminaires for which additional lighting power is claimed in accordance with Section C405.3.2.2.1, and (2) display lighting for exhibits in galleries, museums and monuments.  Also adds a new exception in sleeping units lighting control; task lighting for medical and dental purposes that is in addition to general lighting must be provided with a <i>manual control</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
C405.3.1 Total connected interior lighting power	CE163-19	Editorial changes to items #6 and #7 in the list of lighting equipment and applications excluded from calculating total connected lighting power.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.3.2.2.1 Additional interior lighting power	CE163-19	Modifies the code language; additional power must be permitted only where the specified lighting is installed and controlled in accordance with Section C405.2.4. This code language revision is clarification.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.1.1 Occupant sensor control function	CE167-19	Revises exception which states, full automatic-on controls with no manual control must be permitted in <i>corridors, interior parking areas, stairways, restrooms, locker rooms, lobbies, library stacks, and areas</i> where manual operation would endanger occupant safety or security. Eliminates manual controls requirements for some space types.	Same as change between 2018 IECC and 2021 IECC	None	Decrease
C405.2.1 Occupant sensor controls	CE169-19	Adds "Corridor" space type to the list of space types where occupant <i>sensor</i>	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase

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		<i>controls</i> must be installed to control lights.			
C405.2.1.1 Occupant sensor control function	CE169-19	Revises the section; adds that occupant sensor controls in corridors must comply with a new Section C405.2.1.4.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C405.2.1.4 Occupant sensor control function in corridors	CE169-19	Adds a new section C405.2.1.4.  Occupant sensor controls in corridors must uniformly reduce lighting power to not more than 50% of full power within 20 minutes after all occupants have left the space.  Exception: corridors provided with less than two foot-candles of illumination on the floor are exempted.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C405.2.1.3 Occupant sensor control function in open plan office areas	CE170-19	Removes item #4, daylight responsive control requirement in open plan office space area and adds a revised code provision in Section C405.2.4.1.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.4.1 Daylight-responsive control function	CE170-19	Adds a new integrated control requirement where an occupant sensor and daylight response based lighting controls are used in a space.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.1.3 Occupant sensor control function in open plan office areas	CE171-19	Editorial changes to reduce confusion and inconsistency.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.1.3 Occupant sensor control function in open plan office areas	CE172-19	Adds new exception under requirement item #2.  Exception: Where general lighting is turned off by time-switch control, complying with Section C405.2.2.1 is not required.	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C405.2 Lighting controls	CE175-19	Updates and re-numbers referenced code sections	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.2 Time-switch controls	CE175-19	Editorial changes.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.2.1 Time-switch control function	CE175-19	Removes redundant texts and adds one new compliance requirement: (1) automatically turn off lights when the space is scheduled to be unoccupied, and (2) moves exceptions item #2 dealing for a set of spaces type with manual control to a new code section C405.2.3.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.2.1 Time-switch control function	CE178-19	Reduces the light reduction control luminaire wattage threshold from 100W to 60 W for spaces with manual control in exception item 2.1. Similarly in item 2.2 the spaces LPD threshold was reduced from 0.6 to 0.45 W/ft <sup>2</sup> .	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.3.1 Light-reduction control function	CE175-19	Re-numbers Section C405.2.2.2, edits the title, revise the code language and moves the exception to new section C405.2.3.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.3 Light reduction controls	CE175-19	Adds new code section C405.2.3.  In spaces without occupancy sensor lighting control complying with Section C405.2.1.1, general lighting control must be provided that comply with section C405.2.3.1. Also adds three new exceptions: luminaires controlled by daylight responsive controls, luminaires controlled by special application controls, and spaces with manual lighting control.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.5 Specific application controls	CE175-19	Re-numbers Section C405.2.4 and updates reference code sections.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C405.2.4 Daylight-responsive controls	CE175-19	Re-numbers Section C405.2.3 and updates reference code sections.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.3.1 Light-reduction control function	CE181-19	Re-numbers Section C405.2.2.2, and edits the title. Revises the code language; spaces required to have light-reduction controls must have a <i>manual control</i> that allows the occupant to reduce the connected lighting load using one of the three methods: (1) Continuous dimming of all luminaires from full output to less than 20% of full power. (2) Lamps switching all luminaires to a reduced output b/n 30% and 70% of full power. (3) Switching alternate luminaires or alternate rows of luminaires to achieve a reduced output b/n 30% and 70% of full power.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.3.1 Light-reduction control function	CE182-19	Re-numbers Section C405.2.2.2, edits the title and deletes the exception without substitute.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.4.1 Daylight-responsive control function	CE185-19	Re-numbers Section C405.2.3.1, and revises the code that daylight responsive controls must dim lights continuously from full light output to 15% of full light output or lower where it is required and must not be limited to space types: <i>offices, classrooms, laboratories and library reading rooms.</i>	Same as change between 2018 IECC and 2021 IECC	Decrease	Slightly increases

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C405.2.4 Daylight-responsive controls	CE187-19	Re-numbers Section C405.2.3 and introduces requirements for secondary daylighting zones. The code adds revised specific daylight responsive control requirement for primary and secondary daylighting zones.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.4.1 Daylight-responsive control function	CE187-19	Re-numbers Section C405.2.3.1, and adds code language that lights in the primary sidelit zone must be controlled independently of lights in the secondary sidelit zone. Also revises the code language how the adjacent primary and secondary daylighting zones are controlled.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.4.2 Sidelit daylight zone	CE187-19	Re-numbers Section C405.2.3.2, renames the title, and adds a new code language that defines secondary sidelit zones. The area of secondary sidelit zones must not be considered in the calculation of the daylight zones in Section C402.4.1.1.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C405.2.4.2 Sidelit daylight zone	CE190-19	Re-numbers Section C405.2.3.2, renames the title, and reduced the distance from the fenestration to any building or geological formation that would block access to daylight by half. This change expands the scope daylight responsive controls requirements.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C405.2.4.2 Sidelit daylight zone	CE191-19	Re-numbers Section C405.2.3.2, renames the title, and revises how the primary and secondary daylighting zones longitudinal distance is calculated, and updates Figure C405.2.3.2 to clarify the code and make it consistent with the primary and secondary daylighting zone definitions.	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C405.2.4.2 Sidelit daylight zone	CE192-19	Re-numbers Section C405.2.3.2, renames the title, and adds a code provision that clarifies whether sidelit zone is used where the fenestration is shaded with overhanging projection. Daylighting responsive controls is not required where there is deep overhanging projection.	Same as change between 2018 IECC and 2021 IECC	None	Decrease
C405.2.4.2 Sidelit daylight zone	CE193-19	Re-numbers Section C405.2.3.2, renames the title, updates referenced figures, and defines the specifications of fenestration as roof top monitor to clarify the intent of the code intent.	Same as change between 2018 IECC and 2021 IECC	None	None
Figure C405.2.4.2(2) Daylight Zone Under a Rooftop Monitor	CE193-19	Editorial change and re-numbers Figure C405.2.3.3(2)	Same as change between 2018 IECC and 2021 IECC	None	None
Figure C405.2.4.2(3) Daylight Zone Under a Sloped Rooftop Monitor	CE193-19	Editorial change and re-numbers Figure C405.2.3.3(3)	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.4.3 Toplit daylight zone	CE193-19	Re-numbers Section C405.2.3.3, renames the title, and deletes requirement item 3 and moves it to Section C405.2.4.2. This change is a clarification of code intent.	Same as change between 2018 IECC and 2021 IECC	None	None
Figure C405.2.4.2(1) Primary and Secondary Sidelit Daylight Zones	CE194-19	Editorial change, re-numbers Figure C405.2.3.2 and updates the caption.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.4.4 Atriums	CE196-19	Adds new code provision for Daylight zones at atrium spaces.	Same as change between 2018 IECC and 2021 IECC	None	None

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		Daylight zones at atrium spaces must be established at the top floor surrounding the atrium and at the floor of the atrium space, and not on intermediate floors, as indicated in Figure C405.2.4.4.			
Figure C405.2.4.4 Daylight zones at a multistory atrium	CE196-19	Adds new Figure C405.2.4.4.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.7 Exterior lighting controls	CE197-19	Re-numbers Section C405.2.6 and deletes the text “Decorative lighting systems shall comply with Sections C405.2.6.1, C405.2.6.2 and C405.2.6.4.”	Same as change between 2018 IECC and 2021 IECC	None	None
C405.2.7.2 Building facade and landscape lighting	CE197-19	Re-numbers Section C405.2.6.2 and edits the section title for clarification. This section now applies to building facade and landscaping lighting without any reference to decorative lighting.	Same as change between 2018 IECC and 2021 IECC.	None	None
C405.2.7.3 Lighting setback	CE198-19	Re-numbers Section C405.2.6.3, reorganizes current exterior lighting control requirements and requires that luminaire serving outdoor parking with a wattage greater than 78W and mounting height of 24 ft or less must be controlled such that the lighting is reduced by at least 50% after 15 minutes of no activity. Also requires that no more than 1500W of lighting power is controlled together.	The 2020 FBC-EC already requires not less than 50% exterior lighting power input reduction. But may need to include the new provision for outdoor parking.	None	None
C405.2.8 Parking Garage Lighting Control	CE199-19	Adds new code Section C405.2.8 for parking garage lighting controls requirement. Adds multiple controls requirements for parking garage lighting: automatic time-switch, automatically reduce lighting by 30% when no activity, lighting power	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase

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		reduction in transition zones at nights, and automatic reduction of lighting near perimeter openings and fenestration in response to daylights.			
C405.3.1 Total connected interior lighting power	CE201-19	Adds antimicrobial lighting used for disinfecting to existing 19 items not included applications list when calculating total connected interior lighting power using Equation 4-10.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.3.2 Interior lighting power allowance	CE202-19	Adds a clarification that buildings with unfinished spaces must use the Space-by-Space Method for interior lighting power allowance calculation.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.3.2.2 Space-by-Space Method	CE202-19	Adds a clarification that where a building has unfinished spaces, the lighting power allowance for the unfinished spaces must be the total connected lighting power for those spaces, or 0.2 W/ft <sup>2</sup> , whichever is less.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.3.2 Interior lighting power allowance	CE203-19	Revises the code language to clarify the calculation procedure and code implementation. Also adds a requirement that the interior lighting power allowance for projects that only involve portions of a building must be determined according C405.3.2.2.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.3.2.1 Building Area Method	CE203-19	Deletes and substitutes. Completely rewrites the section to clarify the requirements and avoid confusion and misunderstanding.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.3.2.2 Space-by-Space Method	CE203-19	Deletes and substitutes. Completely rewrites the section to clarify the requirements and avoid confusion and misunderstanding.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C405.3.2(1)	CE206-19	Updates the interior lighting power allowances table for building area	Same as change between 2018 IECC and 2021 IECC	None	None

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Interior Lighting Power Allowances: Building Area Method		method. Reduces the LPD values for all building types with the exception of automotive facility, exercise center, library, parking garage, and workshop.			
Table C405.3.2(2) Interior Lighting Power Allowances: Space-by-Space Method	CE208-19	Updates the interior lighting power allowances table for the space-by-space method. Reduces the LPD values for almost all space types.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.4 Lighting for plant growth and maintenance	CE209-19	Adds “mandatory” new code section C405.4. Not less than 95% of the permanently installed luminaires used for plant growth and maintenance have a photosynthetic photon efficiency of not less than 1.6 $\mu\text{mol}/\text{J}$ as defined in accordance with ANSI/ASABE S640 standards.  Adds new referenced standard: ASABE S640-2017: Quantities and Units of Electromagnetic Radiation for Plants (Photosynthetic Organisms)	Same as change between 2018 IECC and 2021 IECC	Decrease	Slightly increases
C405.5.2 Exterior lighting power allowance	CE211-19	Re-numbers section C405.4.2 and completely re-writes the section to clarify the exterior lighting power allowance computation.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.5.2.1 Additional exterior lighting power	CE211-19	Re-numbers section C405.4.2.1 and edits the section to clarify the requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.9.1 Elevator cabs	CE212-19	Re-numbers section C405.8.1 and designates the section “Mandatory”.	Same as change between 2018 IECC and 2021 IECC	None	May increase per section C405.9 (note that the section is designated mandatory)
C405.9.2 Escalators and moving walks	CE212-19	Re-numbers section C405.8.2 and designates the section “Mandatory”.	Same as change between 2018 IECC and 2021 IECC	None	May increase per section C405.9 (note that the section is

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					designated mandatory)
C405.9.2.1 Regenerative drive	CE212-19	Re-numbers section C405.8.2.1 and designates the section “Mandatory”.	Same as change between 2018 IECC and 2021 IECC	None	May increase per section C405.9 (note that the section is designated mandatory)
C405.10 Voltage drop in feeders and branch circuits	CE212-19	Re-numbers section C405.9 and designates the section “Mandatory”.	Same as change between 2018 IECC and 2021 IECC	None	None
C407.2 Mandatory requirements	CE212-19	Adds code section C405.1, C405.2, and C405.4 through C405.9 to the mandatory requirements and removes code section C405 from the mandatory requirement.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.9.2 Escalators and moving walks	CE213-19	Re-numbers Section C405.8.2.1 and revises to clarify the compliance requirements. This change provides design flexibility.	Same as change between 2018 IECC and 2021 IECC	None	Decrease
C405.9.2.1 Energy Recovery	CE213-19	Re-numbers Section C405.9.2.1 and replaces the title “Regenerative drive” with “Energy Recovery”. Also revises the provision to clarify the section requirement.	Same as change between 2018 IECC and 2021 IECC	None	Decrease
C405.9 Voltage drop	CE214-19	Modifies the section title. Revises the 5% voltage drop maximum limit is now extended to include customer-owned service conductors in addition to feeder conductors and branch circuits.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C405.12 Energy Monitoring	CE215-19	Adds new mandatory code Section C405.12 and sub-sections.  New buildings with a gross conditioned floor area of 25,000 ft <sup>2</sup> or larger must be equipped to measure, monitor, record and report energy consumption	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
		data in accordance with Section C405.12.1 through C405.12.5.			
C405.12.1 Electrical energy metering	CE215-19	Adds new code sub-section describing electrical energy metering requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.12.2 End-use metering categories	CE215-19	Adds new code sub-section. Defines meters or other approved measurement devices requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C405.12.2 Energy Use Categories	CE215-19	Adds new table C405.12.2. The table lists energy end-use categories that need to be metered.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.12.3 Meters	CE215-19	Adds new code sub-section defines energy consumption data communication and display requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.12.4 Data acquisition system	CE215-19	Adds new code sub-section that describes data acquisition system requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.12.5 Graphical energy report	CE215-19	Adds new code sub-section defining requirements of permanent and readily accessible building energy consumptions data graphical display, reporting mechanism and accessibility to building operation and management personnel.	Same as change between 2018 IECC and 2021 IECC	None	None
C405.11 Automatic Receptacle Control	CE216-19	Adds new mandatory code Section C405.11 and a sub-sections.  At least 50% of all 125 V, 15 and 20-amp receptacles installed in enclosed offices, conference rooms, rooms used primarily for copy or print functions, breakrooms, classrooms, and individual workstations, including those installed in modular partitions and module office workstation systems must have automatic controls.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C405.11.1 Automatic receptacle control function	CE216-19	Adds new code sub-section C405.11.1 defining requirements of automatically receptacle control function.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
Section C406 Additional Efficiency Requirements	CE218-19 CE226-19 CE240-19	Edits Section C406 title by deleting “Package Options”.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.1 Additional energy efficiency credit requirements	CE218-19 CE226-19 CE237-19 CE239-19 CE240-19	<p>Renames the title and revises section C406.1. Now new buildings must achieve a total of 10 credits from new Tables C406.1(1) through C406.1(5) depending on buildings use group and climate zone using credit calculations as specified in relevant subsections of C406 where a building complies with one or more of the prescribed additional efficiency options in sections C406.2 through C406.12.</p> <p>Adds new additional efficiency credit for kitchen equipment as item #9 which says, where not required by Section C405.12 include an energy monitoring system in accordance with C406.10.</p> <p>Adds new compliance option item #10 which says, where not required by Section C403.2.3, include a fault detection and diagnostics (FDD) system in accordance with Section C406.11. Adds five new tables C406.1(1) through C406.1(5).</p> <p>Adds new compliance option item #11 for efficient Kitchen equipment in accordance with Section C406.12.</p>	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
Table C406.1(1) Additional Energy Efficiency Credits for Group B Occupancies	CE218-19 CE226-19 CE239-19 CE240-19	Adds new additional efficiency credits table for Group B buildings.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.1(2) Additional Energy Efficiency Credits for Group R and I Occupancies	CE218-19 CE226-19 CE239-19 CE240-19	Adds new additional efficiency credits table for Group R and I buildings.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.1(3) Additional Energy Efficiency Credits for Group E Occupancies	CE218-19 CE226-19 CE239-19 CE240-19	Adds new additional efficiency credits table for Group E buildings.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.1(4) Additional Energy Efficiency Credits for Group M Occupancies	CE218-19 CE226-19 CE239-19 CE240-19	Adds new additional efficiency credits table for Group M buildings.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.1(5) Additional Energy Efficiency Credits for Other Occupancies	CE218-19 CE226-19 CE239-19 CE240-19	Adds new additional efficiency credits table for other occupancy buildings.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.1.1 Tenant spaces	CE218-19 CE226-19 CE240-19	Revises the compliance requirement with new predetermined credits by building group and climate zone.  In the revised code tenant spaces must comply with sufficient options form Tables C406 .1(1) through C406 .1(5) to achieve a minimum number of 5 credits, where credits are selected from Section C406.2, C406.3, C406.4, C406.6 or C406.7. Where the entire building complies using credits from	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		Section C406.5, C406.8 or C406.9, tenant spaces within the building must be deemed to comply with this section.			
C406.2 More efficient HVAC equipment performance	CE113-19 CE218-19 CE224-19 CE226-19 CE240-19	<p>Re-organizes the section and revises the code language such that equipment must exceed the minimum efficiency requirements listed in Section C403.3.2 relevant tables and requires to comply with the new sub-section C406.2.1, C406.2.2, C406.2.3, or C406.2.4.</p> <p>Changes equipment minimum efficiency requirements reference to point to tables in Section C403.3.2.</p> <p>Equipment must meet applicable requirements of Section C403. Energy efficiency credits for heating must be selected from C406.2.1 or C406.2.3 and energy efficiency credits for cooling must be selected from C406.2.2 or C406.2.4. Selected credits must include a heating or cooling energy efficiency credit or both. Equipment not listed in Tables C403.3.2(1) through C403.3.2(9) and for VRF systems not listed in ASHRAE 90.1 must be limited to 10% of the total building system capacity.</p>	Same as change between 2018 IECC and 2021 IECC	None	None
C406.2.1 Five percent heating efficiency improvement	CE218-19 CE224-19 CE226-19 CE240-19	Adds new sub-section. Equipment must exceed the minimum heating efficiency requirements by 5 percent.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.2.2 Five percent cooling efficiency improvement	CE218-19 CE224-19 CE226-19 CE240-19	Adds new sub-section. Equipment must exceed the minimum cooling and heat rejection efficiency requirements by 5 percent. Where multiple cooling	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		equipment are provided, the equipment must exceed the annual energy requirement, including IEER, SEER, and IPLV.			
C406.2.3 Ten percent heating efficiency improvement	CE218-19 CE224-19 CE226-19 CE240-19	Adds new sub-section. Equipment must exceed the minimum heating efficiency requirements by 10 percent.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.2.4 Ten percent cooling efficiency improvement	CE218-19 CE224-19 CE226-19 CE240-19	Adds new sub-section. Equipment must exceed the minimum cooling and heat rejection efficiency requirements by 10 percent. In some cases cooling equipment must exceed the annual energy requirement, including IEER, SEER, and IPLV.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.2.5 More than ten percent cooling efficiency improvement	CE224-19	Adds new section. Requires equipment exceed the minimum annual cooling and heat rejection efficiency requirements by more than 10 percent, energy efficiency credits for cooling may be determined using Equation 4-1. In some cases cooling equipment must exceed the annual energy requirement, including IEER, SEER, and IPLV.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.5 On-site renewable energy	CE218-19 CE226-19 CE240-19	Re-organizes the section by adding two new sub-sections. Now buildings must comply either with Section C406.5.1 or the new Section C406.5.2.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.5.1 Basic renewable credit	CE218-19 CE226-19 CE240-19	Adds new sub-section. Creates a basic renewable credit Section C406.5.1 from existing Section C406.5 using reduced total minimum ratings of on-site renewable energy systems that does not include Section C406.7.2 and must comply with either of (1) not less than 0.86 Btu/h/ft <sup>2</sup> of conditioned floor area, or (2) not less than 2% of the energy	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		used within the building for building mechanical and service water heating equipment and lighting regulated in Chapter 4.			
C406.5.2 Enhanced Renewable Credits	CE218-19 CE226-19 CE240-19	Adds new sub-section that requires the total minimum ratings of on-site renewable energy systems exceeds the rating in C406.5.1 and the additional energy efficiency credits must be determined based on Equation 4-13.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.7 Reduced energy use in service water heating	CE218-19 CE226-19 CE240-19	Adds new section. Buildings must comply with Section C406.7.1 and Section C406.7.2, C406.7.3 or C406.7.4.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.7.1 Building Type	CE218-19 CE226-19 CE240-19	Re-numbers section C406.7, edits the title and revises the code language. To qualify for this credit, the building must contain one of the building use groups defined in this section and the additional energy efficiency credit must be prorated by conditioned floor area of the portion of these building use groups in the building. Adds new Group E building use group.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.7.2 Recovered or renewable water heating	CE218-19 CE226-19 CE240-19	Re-numbers section C406.7.1, edits the title and revises the code language.  Revises the code provision that the building service water heating system must have one or more of the following that are sized to provide not less than 30% of the building's annual hot water requirements, or sized to provide 70% of the building's annual hot water requirements if the building must otherwise is required to comply with Section C403.9.5.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C406.7.3 Efficient fossil fuel water heater	CE218-19 CE226-19 CE240-19	Adds new section that requires the combined input-capacity-weighted-average equipment rating of all fossil fuel water heating equipment in the building must be not less than 95% Et or 0.95 EF. This option receives only half the listed credits for buildings required to comply with C404.2.1.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.7.4 Heat pump water heater	CE218-19 CE226-19 CE240-19	Adds new section that requires (1) all SHW system heating requirements must be met using heat pump technology with a combined input capacity-weighted-average EF of 3.0 where electric resistance water heaters are allowed and (2) air-source heat pump water heaters must not draw conditioned air from within the building except air exhausted to the exterior.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.3 Reduced lighting power	CE226-19	Revises the code such that buildings must comply with Section C406.3.1 or C406.3.2 and dwelling units and sleeping units within the building must comply with C406.3.3.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.3.1 Reduced lighting power by more than 10 percent	CE226-19	Re-numbers section C406.3 and edits the title.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.3.2 Reduced lighting power by more than 15 percent	CE226-19	Adds new sub-section. Where the total connected interior lighting power calculated in accordance with Section C405.3.1 is less than 85% of the total lighting power allowance calculated in accordance with Section C405.3.2, additional energy efficiency credits must be determined based on Equation 4-12.	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C406.3.3 Lamp efficacy	CE226-19	Adds new sub-section. Not less than 95% of the interior lighting power from lamps in permanently installed light fixtures in dwelling units and sleeping units must be provided by lamps with a minimum efficacy of 65 lumens per watt.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.4 Enhanced digital lighting controls	CE231-19	Enhanced lighting control is limited to general lighting; removes the “individual user control of overhead general illumination in open offices” from control requirement.	Same as change between 2018 IECC and 2021 IECC	None	Decrease
C406.10 Energy Monitoring	CE237-19	Adds new code sub-section describing energy metering requirement.  Buildings must be equipped to measure, monitor, record and report energy consumption data in compliance with Section C406.10.1 through C406.10.5.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.10.1 Electrical energy metering	CE237-19	Adds new code sub-section. Defines electrical energy metering requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.10.2 End-use metering categories	CE237-19	Adds new code sub-section. Defines meters or other approved measurement devices requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.10.2 Energy Use Categories	CE237-19	Adds new table C406.10.2. The table lists energy end-use categories that need to be metered.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.10.3 Meters	CE237-19	Adds new code sub-section defined energy consumption data communication and display requirements.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.10.4 Data acquisition system	CE237-19	Adds new code sub-section describes data acquisition system requirements.	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
C406.10.5 Graphical energy report	CE237-19	Adds new code sub-section defining requirements of permanent and readily accessible building energy consumptions data graphical display, reporting mechanism and accessibility to building operation and management personnel.	Same as change between 2018 IECC and 2021 IECC	None	None
C406.11 Fault detection and diagnostics system	CE239-19	Adds new section. A fault detection and diagnostics system must be installed to monitor the HVAC system's performance and automatically identify faults.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
C406.12 Efficient Kitchen Equipment.	CE240-19	Adds new section. For buildings and spaces designated as Group A-2 or facilities that include a commercial kitchen must comply with (1) achieve performance levels listed in Tables C406.12(1) through C406.12(4), (2) appliance must be installed prior to the issuance of the certificate of occupancy, and (3) performance levels must match the values on the construction documents submitted for permitting. Energy efficiency credits for efficient kitchen equipment must be based on Equation 4-15.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.12(1) Minimum Efficiency Requirements: Commercial FRYERS	CE240-19	Adds new table C406.12(1) for commercial fryers.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.12(2) Minimum Efficiency Requirements:	CE240-19	Adds new table C406.12(2) for commercial steam cookers.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
Commercial Steam Cookers					
Table C406.12(3) Minimum Efficiency Requirements: Commercial Dish washers	CE240-19	Adds new table C406.12(3) for commercial dish washers.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C406.12(4) Minimum Efficiency Requirements: Commercial Ovens	CE240-19	Adds new table C406.12(4) for commercial ovens.	Same as change between 2018 IECC and 2021 IECC	None	None
	CE240-19	<p>Adds new referenced ASTM standards:</p> <p>ASTM  F1361-17: Standard Test Method for Performance of Open Deep Fat Fryers  F1484-18: Standard Test Method for Performance of Steam Cookers  F1495-14a: Standard Specification for Combination Oven Electric or Gas Fired  F1496-13: Standard Test Method for Performance of Convection Ovens  F1696-18: Standard Test Method for Energy Performance of Stationary-Rack,Door-Type Commercial Dishwashing Machines  F1920-15: Standard Test Method for Performance of Rack Conveyor Commercial Dishwashing Machines  F2093-18: Standard Test Method for Performance of Rack Ovens  F2144-17: Standard Test Method for Performance of Large Open Vat Fryers</p>	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
		F2861-17: Standard Test Method for Enhanced Performance of Combination Oven in Various Modes			
C407.2 Performance-based compliance	CE243-19	Replaces the text “Price and Expenditure Report” with “Data System Prices and Expenditures reports”.	Same as change between 2018 IECC and 2021 IECC	None	None
Table C407.5.1(1) Specification for The Standard Reference and Proposed Designs	CE247-19	Revises the above grade wall construction for the standard reference design to be the same as the proposed design. Increases construction cost when the proposed building design for above grade wall construction is wood frame. This code change is intended to eliminate the trade-off loophole.	Same as change between 2018 IECC and 2021 IECC	None	Increase depending on the proposed design wall construction
C408.3.1 Functional testing	CE249-19	Editorial change to clarify code language.	Same as change between 2018 IECC and 2021 IECC	None	None
<b>Chapter C5: Existing Buildings</b>					
C502.1 General	CE250-19	Deletes the text “ <i>Additions</i> shall comply with Sections C402, C403, C404, C405 and C502.2”.  <i>Deletes text “Additions complying with ANSI/ASHRAE/IESNA 90.1 need not comply with Sections C402, C403, C404 and C405” because the IECC and ASHRAE code compliance paths cannot be combined.</i>	Same as change between 2018 IECC and 2021 IECC	None	None
C502.2 Change in space conditioning	CE250-19	Moves Section C503.2 to C502.2 and edited the code language for clarity.  Any nonconditioned or low-energy space that is altered to become conditioned space must be required to comply with Section C502.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C502.3 Compliance	CE250-19	Re-numbers Section C502.2, edits the title and updates referenced code sections. Now additions must comply with Sections C502.3.1 through C502.3.6.2.	Same as change between 2018 IECC and 2021 IECC	None	None
C502.3.1 Vertical fenestration area	CE250-19	Re-numbers Section C502.2.1, edits the title, revises the code language, and re-organizes the section for clarity.	Same as change between 2018 IECC and 2021 IECC	None	None
C502.3.2 Skylight area	CE250-19	Re-numbers Section C502.2.2, revises the code language, and re-organizes the section for clarity.	Same as change between 2018 IECC and 2021 IECC	None	None
C502.3.3 Building mechanical systems	CE250-19	Re-numbers Section C502.2.3, editorial changes and adds compliance requirement for Section C408.  New mechanical systems and equipment that are part of the addition and serving the building heating, cooling and ventilation needs must comply with Sections C403 and C408.	Same as change between 2018 IECC and 2021 IECC	None	None
C502.2.6 Lighting power and systems	CE250-19	Editorial changes and adds compliance requirement for Section C408.  New lighting systems that are installed as part of the addition must comply with Section Sections C405 and C408.	Same as change between 2018 IECC and 2021 IECC	None	None
C503.1 General	CE250-19	Made editorial changes and deleted text “Alterations complying with ANSI/ASHRAE/IESNA 90.1 need not comply with Sections C402, C403, C404 and C405” because the IECC and ASHRAE code compliance paths cannot be combined.	Same as change between 2018 IECC and 2021 IECC	None	None
C503.3 Heating and cooling systems	CE250-19	Re-numbers Section C503.4 and adds compliance requirement reference to Section C408.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
C503.4 Service hot water systems	CE250-19	Re-numbers Section C503.5 and adds compliance requirement reference to Section C408.	Same as change between 2018 IECC and 2021 IECC	None	None
C503.5 Lighting systems	CE250-19	Re-numbers Section C503.6 and adds compliance requirement reference to Section C408.	Same as change between 2018 IECC and 2021 IECC	None	None
C503.2 Building envelope	CE250-19	Re-numbers Section C503.3.	Same as change between 2018 IECC and 2021 IECC	None	None
C503.2.1 Roof replacement	CE258-19	Re-numbers Section C503.3.1 and adds a code language that the <i>R-value</i> of the roof insulation must not be reduced or the <i>U-factor</i> of the roof assembly must be increased as part of the <i>roof replacement</i> .	Same as change between 2018 IECC and 2021 IECC	None	None
C503.2.2 Vertical fenestration	CE259-19	Re-numbers Section C503.3.2 and moves Section C401.21 Application to fenestration replacement products to Section 5, re-numbers and edits the title. This change clarifies language and provisions of an existing code.	Same as change between 2018 IECC and 2021 IECC	None	None
C503.2.2.1 Replacement fenestration products	CE259-19	Creates new sub-section by moving Section C401.21 Application to fenestration replacement products to Section 5, re-numbers and edits the title. This change clarifies language and provisions of an existing code.	Same as change between 2018 IECC and 2021 IECC	None	None
C503.2.3 Skylight area	CE259-19	Re-numbers Section C503.3.3.	Same as change between 2018 IECC and 2021 IECC	None	None
<b>APPENNDIX CB: Solar-Ready Zone – Commercial</b>					
CB103.6 Interconnection pathway	CE262-19	Revises the provision by adding a new requirement that the construction document must indicate the pathway for electrical energy storage system area.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
CB103.7 Electrical energy storage system-ready area	CE262-19	Adds a new section.  The floor area of the electrical energy storage system-ready area must be not less than 2 feet in one dimension and 4 feet in another dimension, and located in accordance with Section 1207 of the <i>International Fire Code</i> . The location and layout diagram of the electrical energy storage system-ready area must be indicated on the construction documents.	Same as change between 2018 IECC and 2021 IECC	None	Increase
CB103.8 Electrical service reserved space	CE262-19	Re-numbers Section CA103.7 and revises service area space installation requirements for a dual-pole circuit breaker future solar electric and a dual-pole circuit breaker future electric energy storage system.	Same as change between 2018 IECC and 2021 IECC	None	Increase
CB103.9 Construction documentation certificate	CE262-19	Re-numbers Section CA103.8.	Same as change between 2018 IECC and 2021 IECC	None	Increase
<b>APPENNDIX CC: Zero Energy Commercial Building Provisions</b>					
Section CC101 General	CE264-19	Adds new Section label CC101.	Same as change between 2018 IECC and 2021 IECC	None	None
CC101.1 Purpose	CE264-19	Adds new Section CC101.1. Defines the renewable energy systems capacity requirements to achieve zero net carbon.	Same as change between 2018 IECC and 2021 IECC	None	None
CC101.2 Scope	CE264-19	Adds new Section CC101.2. This appendix applies to new commercial buildings that are addressed by the IEC.	Same as change between 2018 IECC and 2021 IECC	None	None
Definitions Adjusted Off-Site Renewable Energy	CE264-19	Adds the following new definitions that apply to appendix CC101.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
Building Energy Utilization Intensity(EUI) Off-Site Renewable Energy System On-Site Renewable Energy System Renewable Energy System Zero Energy Performance Index (zEPIP/EE) Semi-Heated Space					
CC103.1 Renewable energy	CE264-19	Adds new Section CC103.1.  On-site renewable energy systems must be installed or off-site renewable energy must be procured to offset the building energy.	Same as change between 2018 IECC and 2021 IECC	Decrease	Increase
Table CC103.1 Energy Utilization Intensity for Building Types and Climates (kBtu/ft <sup>2</sup> -Yr)	CE264-19	Adds new table CC103.1.  When Section C401.2 (2) is used for compliance with the IECC, building energy must be determined by multiplying the gross conditioned floor area plus the gross semi-heated floor area of the proposed building by a EUI selected from Table CC103.1. Use floor area weighted average for mixed-use buildings.	Same as change between 2018 IECC and 2021 IECC	None	None
CC103.2 Calculation of On-Site Renewable Energy	CE264-19	Adds new Section CC103.2.  The annual energy production from on-site renewable energy systems must be determined using the PVWatts software or other software approved by the code official.	Same as change between 2018 IECC and 2021 IECC	None	None

2021 IECC Section and Title	ICC Code Change No.	Change Summary b/t 2018 IECC and 2021 IECC	Change Summary b/t 2020 FBC-EC and 2021 IECC	Anticipated Energy Impact on FBC-EC if Adopted*	Anticipated Cost Impact on FBC-EC if Adopted*
CC103.3 Off-Site Renewable Energy	CE264-19	Adds new Section CC103.3. Off-site energy must comply with Sections CC103.3.1 and CC103.3.2.	Same as change between 2018 IECC and 2021 IECC	None	None
CC103.3.1 Qualifying off-site procurement methods	CE264-19	Adds new Section CC103.3.1. This section lists qualifying off-site renewable energy procurement methods.	Same as change between 2018 IECC and 2021 IECC	None	None
CC103.3.2 Requirements for all procurement methods	CE264-19	Adds new Section CC103.3.2. This sections provides requirements that must apply to all <i>off-site renewable energy</i> procurement methods.	Same as change between 2018 IECC and 2021 IECC	None	None
CC103.3.3 Adjusted Off-Site Renewable Energy	CE264-19	Adds new Section CC103.3.3. This section provides a procedure and/or equation used for calculating the adjusted off-site renewable energy.	Same as change between 2018 IECC and 2021 IECC	None	None
Table CC103.3.3 Default Off-Site Renewable Energy Procurement Methods, Classes and coefficients	CE264-19	Adds new table CC103.3.3. This table provides default values off-site renewable energy procurement method, classes, and coefficients.	Same as change between 2018 IECC and 2021 IECC	None	None
<b>Chapter C6: Referenced Standards</b>					
NFRC 203—2017	CE39-19	Adds NFRC 203—2017 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
ANSI/RESNET/ICC 301—2019	CE44-19	Updates ANSI/RESNET/ICC 301—2019	Same as change between 2018 IECC and 2021 IECC	None	None
ICC 500 ICC/NSSA	CE92-19	Adds ICC 500: ICC/NSSA to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
ASTM E3158-18	CE98-19	Adds ASTM E3158 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None

<b>2021 IECC Section and Title</b>	<b>ICC Code Change No.</b>	<b>Change Summary b/t 2018 IECC and 2021 IECC</b>	<b>Change Summary b/t 2020 FBC-EC and 2021 IECC</b>	<b>Anticipated Energy Impact on FBC-EC if Adopted*</b>	<b>Anticipated Cost Impact on FBC-EC if Adopted*</b>
ASTM D8052/D8052M-2017	CE101-19	Adds ASTM D8052/D8052M-2017 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
ASHRAE 90.4-2016	CE108-19	Adds ASHRAE 90.4-2016 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
AMCA 208-18	CE139-19	Adds AMCA 208-18 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
ANSI/AMCA 230-15	CE141-19	Adds ANSI/AMCA 230-15 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
AHRI 1250-(I-P) 2014	CE146-19	Adds AHRI 1250-(I-P) 2014 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
AHRI 1250-(I-P) 2014	CE149-19	Adds AHRI 1250-(I-P) 2014 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
ASABE/ S640-2017	CE209-19	Adds new standard ASABE/ S640-2017 to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None
ASTM F1361-17 F1484-18 F1495-14a F1496-13 F1696-18 F1920-15 F2093-18 F2144-17 F2861-17	CE240-19	Adds the nine ASTM standards to referenced standard	Same as change between 2018 IECC and 2021 IECC	None	None

\* FSEC assessment of energy and cost impacts consistent with those in 2018 I-Codes Revision History unless otherwise noted.