

# Code Review

## 2018 Changes to International Codes

### IEBC - STRUCTURAL TAC

**W A R N I N G**

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**W A R N I N G**



**FLORIDA  
BUILDING  
COMMISSION**  
*"Stronger Codes Through Science and Consensus"*

Florida  
**dbpr**  
Department of Business and Professional Regulation



Building Codes and Standards

# Existing Building Code(IEBC)–(Structural)

## Structural Technical Advisory Committee (TAC)

**2018 International Existing Building Code – Structural**

**Structural TAC**

IEBC Code Change No.	IEBC Section	Change Summary b/t 2015 IEBC and 2018 IEBC	Change Summary b/t 2017 FEBC and 2018 IEBC	Staff comments
<p><b>EB 10-15</b></p>	<p>New 301.1 New 301.2  301.1 301.1.1 301.1.2 301.1.3 401.1 401.1.1 401.1.2.2 404 501.1 501.1.1 502 1401.1 1401.1.1 1401.2.4</p>	<p>Modifies Chapter 6 to Chapter 4 “Repairs”. Modifies Section 301 “Administration”. Modifies 301.1 “General”, 301.2 “Repairs”, 301.3 “Alteration, change of occupancy, addition or relocation”, 301.3.1 “Prescriptive compliance method”, 301.3.2 “Work area compliance method”, 301.3.3 “Performance compliance method”, 401.1 “Scope”, 401.1.1 “Compliance with other methods”, 401.2.2 “New and replacement materials”. Deletes Section 404 “Repairs”. Modifies text of Section 501.1 “Scope”, 501.1.1 Compliance with other alternatives. Deletes Section 502 “Repairs”. Modifies text of Section 1401.1 “Scope”, 1401.1.1 “Compliance with other methods”, 1401.2.4 “Alterations and repairs”.</p> <p>This section corrects section numbering and references in FBC, EB Chapter 3 after creating new section 303 and removes duplicate details which will now be part of section 303 if approved. This proposal will make the repair provisions more consistent for each method. The committee felt that having a standalone chapter for repairs will make the code more clear.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction This proposal is only to <b>clarify the existing code requirements through relocation (reorganization)</b> of code sections, so there is no intended increase or decrease expected by approving this proposal.</p>	<p>This change is not similar to that of the FEBC. The FEBC provides for Florida specific changes to these sections</p>	<p>Overlapping provision to be considered during step 2 of the code change process</p>

*Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:*

*a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design*

TAC Action		Commission Action		TAC	Cmsn.
Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/>	<input type="checkbox"/>
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<b>EB 1-16</b>	(New) 202 (New) 402.2 (New) 606.2.2	Adds new definition “DISPROPORTIONATE EARTHQUAKE DAMAGE”. Adds new 402.2 “Disproportionate earthquake damage”, 606.2.2 “Disproportionate earthquake damage”. This proposal complements and completes the code's current intent: To identify especially vulnerable buildings at critical points in their useful lives, and to require evaluation and possibly upgrade. Current provisions already identify substantially damaged buildings and, for those found to be especially vulnerable, the code requires a seismic upgrade.  <b>Cost Impact: Will increase the cost of construction.</b> For buildings in regions of high seismicity that sustain unexpected, or "disproportionate," earthquake damage, the proposed provision will increase the costs associated with post-earthquake repair. It is also likely that the upgrades so triggered will significantly REDUCE repair costs in subsequent damaging events.	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed – seismic provisions.</b>	
TAC Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Commission Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/>	<input type="checkbox"/>
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<b>EB 12-16</b>	(New) 303 (New) 303.1 [BS] 402.3.1 [BS] 403.3.1 [BS] 807.3	Adds news Section 303 “Design Loads”. Deletes section [BS] 402.3.1 “Design live load”, [BS] 403.3.1 “Design live load”, [BS] 807.3 “Minimum design loads”. Alters language regarding Design Live Loads and minimum design loads. This proposal reconciles differences between similar provisions in the Prescriptive and Work Area methods and moves the reconciled provision to Chapter 3. The proposal	Same as change between 2015 IEBC and 2018 IEBC		

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		<p>replaces three sections, generally implementing the preferred and more complete provisions from Sections 402.3.1 and 403.3.1 (and 404.3, made moot by Group A EB 10). Because the reconciled provision applies to multiple methods and to multiple project types, and because it contains no project-specific triggers or exceptions, it is suitable for Chapter 3. The code change was further modified by the Committee. The modification further clarifies the live load provision, incorporating current wording.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction <b>Reorganization and consolidation only</b>. The cost of placarding might increase, but it is not included as part of the cost of construction.</p>					
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>			<p><b>TAC</b></p>	<p><b>Cmsn.</b></p>	
				<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>	
<p><b>EB 13-16</b></p>	<p>(New) 303 (New) 303.1</p>	<p>Modifies text of SECTION 303 “IN-SITU LOAD TESTS”, Modifies text of Section 303.1 “General”. Adds new language regarding In-SITU Load Tests. The in-situ load test provisions in the IBC are used for both new and existing buildings. The IEBC does not currently contain provisions for load tests of existing buildings but needs to, as in-situ load testing is a valid means of assessing an existing structure's or an existing component's strength.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction This proposal has no cost implications, as the provisions in IBC Section 1708 were already intended to apply to both new and existing buildings. This proposal simply <b>clarifies</b> that the in-situ load test provisions of IBC Section 1708 can still be used to assess existing structures.</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>				

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<b>EB 17-16</b>	[BS] 1103.3 [BS] 1103.3.1 [BS] 1103.3.2 [BS] 1103.3.3 [BS] 402.4	Modifies text of Section [BS] 402.4 “Existing structural elements carrying lateral load”, [BS] 1103.3 “Lateral force-resisting system”. Deletes section [BS] 1103.3.1 “Vertical addition”, [BS] 1103.3.2 “Horizontal addition”, [BS] 1103.3.3 “Voluntary addition of structural elements to improve the lateral force-resisting system”. This proposal makes corresponding sections of the Prescriptive and Work Area methods identical. The only substantive difference between the current provisions is that the current WAM provision includes the light-frame exception, so this is added to the Prescriptive provision. Otherwise, all of the revisions shown are editorial.  <b>Cost Impact:</b> Will not increase the cost of construction <b>Could REDUCE the cost</b> of construction through a new exception to the Prescriptive method.	Same as change between 2015 IEBC and 2018 IEBC		
TAC Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Commission Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/>	<input type="checkbox"/>
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<b>EB 18-16</b>	[BS] 403.3 [BS] 707.2 [BS] 807.4	Modifies section [BS] 403.3 “Existing structural elements carrying gravity load”, [BS] 707.2 “Addition or replacement of roofing or replacement of equipment”, [BS] 807.4 “Existing structural elements carrying gravity loads”. The basic intent of these three sections is the same: Gravity load increases of 5% or more, as well as capacity reductions, require redesign. However, the three sections differ in their wording, in their explicit inclusion of snow drift effects, and in their exceptions.	Same as change between 2015 IEBC and 2018 IEBC		

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		<p>This proposal provides correlation between the prescriptive and work area methods, improving upon the current wording so that the requirements are more understandable. The code change was further modified by the Committee. The modification corrects mistakes in the original proposal.</p> <p><b>Cost Impact: Will increase the cost of construction.</b> The proposed change could increase OR DECREASE the cost of construction. By reconciling the two methods, a common-sense snow provision has been added to the Prescriptive method, but two exceptions have been added as well.</p>					
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>			<p><b>TAC</b></p>	<p><b>Cmsn.</b></p>	
<p><b>EB 19-15</b></p> <p>402.1 403.1 407.1 601.2 608.1 805.2 [BS] 403.9 [BS] 807.6</p>		<p>Modifies section 402.1 "General", 403.1 "General", [BS] 403.9 "Voluntary seismic improvements", 407.1 "Compliance", 601.2 "Compliance", 608.1 "General", 805.2 "General", [BS] 807.6 "Voluntary lateral force-resisting system alterations".</p> <p>This proposal changes the word <b>Conformance</b> to <b>Compliance</b>. This proposal was editorial in nature and the phrase "complying with" is preferred over "conforming to. This is an editorial proposal that adds clarity and consistency. The appropriate phrase is "no less complying," not "no less conforming." "Complying" is also the term with greater precedent and preference, as seen in sections 301.1, 406.2, 407.1, 410, 702, 705, 803, 805, 903, 1012, 1203, and 1204.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction. <b>The proposal is entirely editorial.</b></p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>				

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				<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>
<b>EB 20-16</b>	[BS] 403.4 [BS] 807.5	Modifies text of Section [BS] 403.4 “Existing structural elements carrying lateral load”, [BS] 807.5 “Existing structural elements resisting lateral loads”. This proposal makes corresponding sections of the Prescriptive and Work Area methods identical. It makes a number of editorial revisions (listed below) and one substantive change. The substantive change is this: Currently, for exactly the same situations, Section 807.5 allows the use of reduced seismic loads, while Section 403.4 does not.  <b>Cost Impact:</b> Will not increase the cost of construction Could <b>actually REDUCE the cost</b> of certain triggered upgrades. Otherwise, editorial.	Same as change between 2015 IEBC and 2018 IEBC		
Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/> No Action Needed	<input type="checkbox"/>
				<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>
<b>EB 21-16</b>	[BS] 403.4.1 [BS] 403.6 [BS] 403.7	Modifies text of Section [BS] 403.4.1 “Seismic Design Category F”, [BS] 403.6 “Wall anchorage for unreinforced masonry walls in major alterations”, [BS] 403.7 “Bracing for unreinforced masonry parapets in major alterations”. This proposal revises these provisions more consistent with the work area method which would only address alterations that have reconfigured space over 50% of the building. This proposal limits the area of alterations to the defined term; “work area”. This will prevent the inclusion of other areas, such as portions of the building where incidental work is being performed.	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed. Seismic provisions.</b>	

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		<p><b>Cost Impact:</b> Will not increase the cost of construction This proposal will not increase the cost of construction as it limits the area of alteration to the work area.</p>		
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<p>TAC</p> <p>Cmsn.</p>
				<p><input type="checkbox"/> No Action Needed</p> <p><input type="checkbox"/> Overlapping provisions</p>
EB 22-16	[BS] 403.4.1	<p>Modifies text of Section [BS] 403.4.1 “Seismic Design Category F”. This proposal reconciles a substantive difference between the Work Area and Prescriptive methods. Current section 403.4.1 already has a seismic evaluation/retrofit trigger that matches section 907.4.3, but 907.4.3 also has a wind requirement. This proposal adds a matching wind requirement to the Prescriptive provision.</p> <p><b>Cost Impact:</b> Will increase the cost of construction. Cost-beneficial cost increase, only for SDC F buildings with high wind loads undergoing major alterations.</p>	Same as change between 2015 IEBC and 2018 IEBC	No action needed Seismic provisions.
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<p>TAC</p> <p>Cmsn.</p>
				<p><input type="checkbox"/> No Action Needed</p> <p><input type="checkbox"/> Overlapping provisions</p>
EB 23-16	[BS] 403.4.1 [BS] 907.4.3	<p>Modifies text of Section [BS] 403.5 “Seismic Design Category F”, [BS] “907.5 Seismic Design Category F”. This proposal simplifies and clarifies the wording of corresponding proposals in the Work Area and Prescriptive methods.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction This proposal is editorial, therefore there is no change in construction requirements.</p>	Same as change between 2015 IEBC and 2018 IEBC	No action needed Seismic provisions.

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<p><b>EB 27-16</b></p>	<p>[BS] 403.6 [BS] 907.4.5</p>	<p>Modifies Section [BS] 403.6 “Wall anchorage for unreinforced masonry walls in major alterations”, [BS] 907.4.5 “Wall anchors for concrete and masonry buildings”. This proposal extends the URM mitigation requirement for Level 3 alteration projects. Currently, Level 3 alterations trigger URM parapet bracing and anchors at the roof line in both the Work Area and Prescriptive methods. ...Feasible practice in Massachusetts and California indicate that URM walls should be anchored at floor levels as well, in order to achieve even basic collapse prevention performance. (IEBC Appendix A1 and ASCE 41 Chapter 15 say the same.)</p> <p><b>Cost Impact: Will increase the cost of construction.</b> A small additional cost with a high benefit-cost ratio for URM buildings with major alterations. No additional cost for lesser alterations.</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>	<p><b>No action needed Seismic provisions.</b></p>			
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p><input type="checkbox"/> No Action Needed</p> <p><input type="checkbox"/> Overlapping provisions</p>	<p><b>TAC</b></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><b>Cmsn.</b></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	
<p><b>EB 28-16</b></p>	<p>(New) 403.7</p>	<p>Adds new Section “403.7 Anchorage for concrete and reinforced masonry walls”. This proposal resolves an inconsistency between the Work Area method and the Prescriptive method. Currently, the Work Area method has a sensible provision that requires roof-to-wall anchors in Level 3 Alterations for concrete and reinforced masonry walls as well as URM walls (907.4.5) but the Prescriptive method addresses only URM walls (403.6). This proposal adds a matching proposal for concrete and RM walls to the Prescriptive method.</p> <p><b>Cost Impact: Will increase the cost of construction</b> For certain buildings, including vulnerable tilt-ups, undergoing major alterations. No change for other buildings or lesser alterations</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>	<p><b>No action needed Seismic provisions.</b></p>			

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Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/> No Action Needed		<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/> Overlapping provisions		<input type="checkbox"/>	<input type="checkbox"/>
EB 29-16	(New) 403.8 (New) 907.4.7	<p>Adds new Section 403.8 “Anchorage of unreinforced masonry partitions in major alterations”, 907.4.7 “Anchorage of unreinforced masonry partitions”. This proposal adds a proactive mitigation trigger to address a common nonstructural falling hazard. Currently, both the Prescriptive and Work Area methods include mitigation requirements for URM parapets and bearing walls, triggered by major (Level 3) alterations. A related hazard involves the failure of interior unreinforced masonry partitions, especially around stairwells and egress corridors.</p> <p><b>Cost Impact: Will increase the cost of construction.</b> The cost increase is for URM partitions only, and only within the work area and egress paths. Where the intended work already involves partition alteration, there is no cost increase.</p>	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed</b> Seismic provisions.			
TAC Action		Commission Action			TAC	Cmsn.	
Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/> No Action Needed		<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/> Overlapping provisions		<input type="checkbox"/>	<input type="checkbox"/>
EB 31-16	(New) 403.8 [BS] 907.4 [BS] 907.4.2	<p>Adds new Section 403.8 “Substantial structural alteration”. Modifies text of Section [BS] 907.4 “Existing structural elements resisting lateral loads”, [BS] 907.4.2 “Substantial structural alteration”. This proposal reconciles a significant difference between the Prescriptive method and the Work Area method. Currently, the Work Area method triggers a potential seismic upgrade for a Level 3 Alteration project whose intended scope includes a substantial alteration (as</p>	Same as change between 2015 IEBC and 2018 IEBC				

Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:

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	<p>defined in 907.4.2). The Prescriptive method has no such trigger. This proposal adds the identical trigger to the prescriptive method.</p> <p><b>Cost Impact: Will increase the cost of construction.</b>          For a major alteration with substantial structural alteration as part of its intended scope, the cost will increase as needed to do a seismic upgrade with reduced loads. The additional cost could be zero, or it could be more than zero.</p>		
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<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>	<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>				

<b>EB 3-16</b>	[A] 101.6 202 [BS] 404.2 [BS] 404.2.3 [BS] 606.2.2 [BS] 606.2.2.3 [BS] 606.2.3.1 [BS] A101.1 [BS] A501.1 [BS] A503.1	Modifies text of Section [BS] 404.2 "Substantial structural damage to vertical elements of the lateral force-resisting System", [BS] 404.2.3 "Extent of repair for noncompliant buildings", [BS] 404.2.3 "Extent of repair for noncompliant buildings", [BS] 404.3.1 "Lateral force-resisting elements", [BS] 606.2.2 "Substantial structural damage to vertical elements of the lateral force-resisting system", [BS] 606.2.2.3 "Extent of repair for noncompliant buildings", [BS] 606.2.3.1 "Lateral force-resisting elements", [A] 101.6 "Appendices", [BS] A101.1 "Purpose", [BS] A501.1 "Purpose", [BS] A503.1 "General". Deletes definition [BS] REHABILITATION, SEISMIC. Language to improve seismic lateral force resistance. The provisions of this chapter are intended as minimum standards for structural seismic resistance, and are established primarily to reduce the risk of life loss or injury. Compliance with the provisions in this chapter will not necessarily prevent loss of life or injury or prevent earthquake damage to the rehabilitated retrofitted buildings. The proposal removes an unnecessary definition -- Seismic Rehabilitation - - and updates the related wording throughout the code from "rehabilitation" to "retrofit." (Sections where "rehabilitation" is used to mean anything other than seismic or wind upgrade	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed on the change to 202 and Appendix A as these changes are seismic provisions.</b>
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*Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:*

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		<p>remain unchanged, as does the definition of Rehabilitation as a stand-alone term.) The term "rehabilitation" appears throughout the code, but almost always in the context of "seismic rehabilitation" -- but without the modifier "seismic." Thus, the existence of these two definitions is inconsistent with the code text and potentially confusing. The proposal removes this confusion by using the preferred term, "retrofit" wherever seismic or wind improvements are at issue.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction The change is <b>editorial</b> so there are not changes to construction requirements.</p>														
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="checkbox"/></p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="checkbox"/></p>		<table border="1"> <thead> <tr> <th></th> <th>TAC</th> <th>Cmsn.</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> No Action Needed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Overlapping provisions</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>		TAC	Cmsn.	<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>			
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EB 33-16	[BS] 403.9 [BS] 807.6	<p>Modifies Section [BS] 403.9 "Voluntary lateral force-resisting system alterations", [BS] 807.6 "Voluntary lateral force-resisting system alterations". This proposal reconciles differences between the voluntary retrofit provisions in the Prescriptive and Work Area methods. The main purpose of the proposal is to provide identical wording in each method. To do this, the proposal simplifies the base provision in each case and borrows bits from each current provision, with two objectives.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction This proposal is a <b>clarification</b> of intent, with editorial changes. There is no change to construction requirements.</p>	Same as change between 2015 IEBC and 2018 IEBC	<b>No action is needed for 403.9. Section 403.9 provides for seismic requirement.</b>												

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<b>EB 36-16</b>	407.1 (New) 407.4 (New) 407.4.1 (New) 407.4.2 (New) 407.4.4 [BS] 407.4	Modifies text of Section 407.1 “Conformance”, [BS] 407.4.3 “Seismic loads”. Adds new Section 407.4.1 “Live loads”, 407.4.2 “Snow and wind loads”, 407.4.4 “Access to Risk Category IV”. This proposal reconciles substantive differences between the Prescriptive method and the Work Area method. Currently, the Prescriptive method has only one load-specific structural provision related to change of occupancy -- 407.4, which triggers a seismic upgrade (with exceptions) when the risk category increases. The proposed wording matches the editorial revisions being proposed separately to corresponding sections of 1007.  <b>Cost Impact:</b> Will not increase the cost of construction It will actually <b>decrease the cost of</b> construction by introducing exceptions not currently available to users of the prescriptive method.	Same as change between 2015 IEBC and 2018 IEBC		
TAC Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Commission Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/>	<input type="checkbox"/>
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<b>EB 38-16</b>	[BS] 1007.3.1 [BS] 407.4	Modifies [BS] 407.4 Seismic force-resisting system”, [BS] 1007.3.1 “Seismic force resisting system”. This proposal reconciles, clarifies, and simplifies the provisions for seismic upgrade triggered by a change of risk category, found in Section 407.4 in the Prescriptive method and Section 1007.3.1 in the Work Area method.  <b>Cost Impact:</b> Will not increase the cost of construction	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed Seismic provisions.</b>	

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		By adding more exceptions to each method, the proposal will actually REDUCE the cost of construction.											
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<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>											
<b>EB 4-15</b>	202	Adds new definition “[A] EXISTING BUILDING”.  The IEBC uses both the terms “existing building” and „existing structure”, but only defines „existing building”. The IBC only defines „existing structure”.  <b>Cost Impact:</b> this proposal will not affect the cost of construction because it merely adds a definition.	This change is not similar to that of the FEBC. The FEBC provides for Florida specific changes to this definition	Overlapping provision to be considered during step 2 of the code change process									
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<table border="1"> <thead> <tr> <th></th> <th>TAC</th> <th>Cmsn.</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> No Action Needed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Overlapping provisions</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		TAC	Cmsn.	<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>											
<b>EB 4-16</b>	202 [BS] 301.1.4.1 Table [BS] 301.1.4.1 [BS] 301.1.4.2 Table [BS] 301.1.4.2	Modifies text of [BS] SEISMIC FORCES, [BS] 301.1.4.1 Compliance with full seismic forces. Modifies title of Table [BS] 301.1.4.1 to “PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH FULL SEISMIC FORCES”, TABLE [BS] 301.1.4.2 “PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED SEISMIC FORCES”. This proposal simplifies the code's terminology, increasing usability and reducing potential errors. The terms "International Building Code-level seismic forces" and "reduced International Building Code-level seismic forces" are unwieldy and potentially confusing. The long terms disrupt a reader's flow. The use of two long labels, one of which is entirely	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed</b> <b>Seismic provisions.</b>									

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		<p>embedded in the other, is a recipe for confusion and error. Further, one could argue that neither term is actually technically accurate either, since the listed criteria actually allow sometimes significant departures from the IBC's prescriptive provisions (which themselves adopt ASCE 7).</p> <p><b>NOTE:</b> The proposal does not show every place where one of the two current terms would need to be replaced. If the proposal is approved, this can be done by staff during the course of editing.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction This change is editorial, so there are no changes to construction requirements.</p>		
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<p><b>TAC Action</b></p> <p>Accommodate Florida Specific Need:</p> <p>YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/></p> <p>a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/></p> <p>Others (Explain):</p>	<p><b>Commission Action</b></p> <p>Accommodate Florida Specific Need:</p> <p>YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/></p> <p>a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/></p> <p>Others (Explain):</p>		<b>TAC</b>	<b>Cmsn.</b>
		<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>

<b>EB 42-16</b>	<p>(New) 302.4.1 801.3 [BS] 606.1 [BS] 807.2</p>	<p>Adds new Section 302.4.1 “New structural members and connections”. Modifies text of Section [BS] 606.1 “General”, 801.3 “Compliance”. Deletes text of Section [BS] 807.2 “New structural elements”. This proposal relocates multiple overlapping provisions to Chapter 3 and provides a necessary exception to account for alternative seismic criteria. The code change was further modified by the Committee. The modification rewords the new exception to make it a permitted option.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction <b>Clarification</b> of current intent, with some possible cost decrease</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>	
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<b>EB 43-16</b>	(New) 606.2.1.1 [BS] 606.2.1	Modifies text of Section [BS] 606.2.1 “Repairs for less than substantial structural damage”. Adds text of Section 606.2.1.1 “Snow damage”. This proposal adds a limited and minor upgrade requirement for structural damage caused by snow.  <b>Cost Impact:</b> Will increase the cost of construction There <b>will be a slight increase in the cost of construction</b> , but only the damaged elements.	Same as change between 2015 IEBC and 2018 IEBC	<b>No action is needed for 606.2.1.1 Section 606.2.1.1 provides for snow load requirement.</b>	
TAC Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Commission Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/>	<input type="checkbox"/>
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<b>EB 44-16</b>	[BS] 606.2.3.1	Modifies text of Section [BS] 606.2.3.1 “Lateral force-resisting elements”. This is a simple correction. The provision intends to refer to the vertical elements of the LFRS, as covered in 606.2.2.  <b>Cost Impact:</b> Will not increase the cost of construction This is an <b>editorial</b> correction; therefore there is no change to construction requirements.	Same as change between 2015 IEBC and 2018 IEBC		

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<b>EB 48-16</b>	[BS] 907.1	Modifies Section [BS] 907.1 "General". This proposal clarifies the intended application of section 907. As written, 907 applies to "Level 3 alterations including structural alterations." This wording is unclear. Committee Reason: This code change clarifies the IEBC by removing confusing verbiage, because it is agreed that level 3 alterations should require compliance with Section 907.  <b>Cost Impact:</b> Will not increase the cost of construction This is a <b>clarification</b> of current intent so there is no change to construction requirements.	Same as change between 2015 IEBC and 2018 IEBC		
Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/>	<input type="checkbox"/>
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<b>EB 49-16</b>	[BS] 907.2 [BS] 907.3 [BS] 907.4 [BS] 907.4.1 [BS] 907.4.2 [BS] 907.4.3 [BS] 907.4.4 [BS] 907.4.5 [BS] 907.4.6	Deletes Section [BS] 907.2 "New structural elements", [BS] 907.3 "Existing structural elements carrying gravity loads", [BS] 907.4.1 "Evaluation and analysis", [BS] 907.4.2 "Substantial structural alteration", [BS] 907.4.4 "Limited structural alteration". Modifies text of Section [BS] 907.4 "Existing load-resisting system", [BS] 907.5 "Seismic Design Category F", [BS] 907.6 "Wall anchors for concrete and masonry buildings", [BS] 907.7 "Bracing for unreinforced masonry parapets". This proposal simplifies Section 907, removing duplication and clarifying the intent. The committee agreed that this code change provides needed clarifications, simplifications and reorganization of Section IEBC 907.	Same as change between 2015 IEBC and 2018 IEBC		

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		<p><b>Cost Impact:</b> Will not increase the cost of construction This is an <b>editorial clarification</b> of current intent, therefore there will be not change in construction requirements.</p>											
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<table border="1"> <thead> <tr> <th></th> <th>TAC</th> <th>Cmsn.</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> No Action Needed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Overlapping provisions</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		TAC	Cmsn.	<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>
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<p><b>EB 50-16</b></p>	<p>(New) 202 [BS] 1007.1 [BS] 1007.2 [BS] 1007.3.2</p>	<p>Adds new definition "RISK CATEGORY". Modifies text of [BS] 1007.1 "Live loads", [BS] 1007.2 "Snow and wind loads", [BS] 1007.3.2 "Access to Risk Category IV". This proposal makes editorial changes for consistency, clarity, and simplification. The revisions use the preferred wording and logic approved for other sections in recent code cycles, so as to make the structural provisions more uniformly understandable and enforceable throughout the IEBC</p> <p><b>Cost Impact:</b> Will not increase the cost of construction This is an <b>editorial change</b>, so there will be no change to construction requirements.</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>	<p><b>No action is needed for 1007.3.2. Section 1007.3.2 provides for seismic requirement.</b></p>									
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):</p>		<table border="1"> <thead> <tr> <th></th> <th>TAC</th> <th>Cmsn.</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> No Action Needed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Overlapping provisions</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		TAC	Cmsn.	<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>
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<p><b>EB 51-16</b></p>	<p>[BS] 1007.2</p>	<p>Modifies text of Section [BS] 1007.2 "Snow and wind loads". Table 1604.5 of the IBC is not about wind or snow categories; it is entitled "Risk Category of Buildings and Other Structures". To say that a change in the nature of the occupancy results in a higher wind or snow category is inaccurate, so this proposal deletes that language.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>										

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		The proposed modification does not change the requirement, so cost is not impacted.											
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<table border="1"> <thead> <tr> <th></th> <th>TAC</th> <th>Cmsn.</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> No Action Needed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Overlapping provisions</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		TAC	Cmsn.	<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>											
<b>EB 52-15</b>	601.2 608.1	Modifies text of Section 601.2 “Conformance”, 608.1 “General”. The current text talks about the condition "before the repair was undertaken." This means the damaged condition. What these provisions intend is to restore the condition that existed before the damage, not before the repair.  <b>Cost Impact:</b> Will not increase the cost of construction The proposal is <b>editorial</b> .	Same as change between 2015 IEBC and 2018 IEBC										
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<table border="1"> <thead> <tr> <th></th> <th>TAC</th> <th>Cmsn.</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> No Action Needed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Overlapping provisions</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		TAC	Cmsn.	<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>											
<b>EB 52-16</b>	[BS] 1007.3 [BS] 1007.3.1 [BS] 1007.3.2	Deletes Section [BS] 1007.3 “Seismic Loads”. Modifies text of Section [BS] 1007.3 “Seismic loads”, Section [BS] 1007.4 “Access to Risk Category IV”. This proposal makes Section 1007.3.2 more general. It recognizes that access to a newly reclassified Risk Category IV building is important with respect to wind and snow damage as well as earthquake damage. By re-numbering 1007.3.2 as its own section, it will now apply to more than just seismic loads.  <b>Cost Impact:</b> <b>Will increase the cost of construction.</b> In the rare cases where an existing RC I, II or III building is reclassified to RC IV and is served by an adjacent RC I, II, or	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed</b> <b>Seismic provisions.</b>									

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		III structure, this proposal might lead to increase costs to improve resistance to wind and snow.			
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> NO: <input type="checkbox"/> Others (Explain): 		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> NO: <input type="checkbox"/> Others (Explain): 		<b>TAC</b> <input type="checkbox"/> No Action Needed <input type="checkbox"/> Overlapping provisions	<b>Cmsn.</b> <input type="checkbox"/> <input type="checkbox"/>
<b>EB 53-16</b>	[BS] 1103.1 [BS] 1103.3.3	Deletes Section [BS] 1103.1 "Compliance with the International Building Code", [BS] 1103.3.3 "Voluntary addition of structural elements to improve the lateral force-resisting system". This proposal removes two small sections that are entirely redundant. Current 1103.1 is redundant with respect to 1101.1. Current 1103.3.3 is redundant with respect to 807.6, to which it points. In addition, 1103.3.3 should be removed from Chapter 11 because "addition of structural elements" is not about Additions.  <b>Cost Impact:</b> Will not increase the cost of construction This proposal <b>is editorial</b> , so there will be no change in construction requirements.	Same as change between 2015 IEBC and 2018 IEBC		
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> NO: <input type="checkbox"/> Others (Explain): 		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> NO: <input type="checkbox"/> Others (Explain): 		<b>TAC</b> <input type="checkbox"/> No Action Needed <input type="checkbox"/> Overlapping provisions	<b>Cmsn.</b> <input type="checkbox"/> <input type="checkbox"/>
<b>EB 58-16</b>	APPENIX A Ch A1 Chapter A6	Modifies text of Section [BS] A102.1 "General", SECTION A104 "SYMBOLS AND NOTATIONS", SECTION A105 "GENERAL REQUIREMENTS", [BS] A105.1 "General", [BS] A105.3 "Requirements for plans", [BS] A105.4 "Structural observation, testing and inspection", A106.1 "Condition of Existing materials", [BS] A106.2 "Existing unreinforced masonry". [BS] A106.2.1 "General", [BS] A106.2.2 "Lay-up of walls", [BS] A106.2.2.1 "Header in multi-wythe solid brick",	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed</b> <b>Seismic provisions.</b>	

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		<p>[BS] A106.2.2.2 “Concrete masonry units and structural clay load-bearing tile”. [BS] A106.2.2.3 “Other lay-up patterns”, [BS] A106.2.3 “Testing of masonry”. [BS] A106.2.3.1 “In-place mortar tests”. [BS] A106.2.3.2 “Alternative procedures for testing masonry”, [BS] A106.2.3.3 “Location of tests”, [BS] A106.2.3.4 “Number of tests”, [BS] A106.2.3.5 “Minimum quality of mortar”, [BS] A106.2.3.6 “Minimum quality of masonry”, [BS] A106.2.3.7 “Collar joints.”, [BS] A106.2.3.8 “Unreinforced masonry classes”, [BS] A106.2.3.9 “Pointing”, [BS] A107.3 “Existing wall anchors”, [BS] A107.4 “New bolts wall anchors”, [BS] A107.5 “Tests of anchors in unreinforced masonry walls”. [BS] A107.5.1 “Direct tension testing of existing anchors and new anchors”, [BS] A107.5.2 “Torque testing of new anchors”, [BS] A107.5.3 “Prequalification tests for non-conforming anchors”, [BS] A108.1 “Strength Values”, [BS] A108.2 “Masonry shear strength”, [BS] A108.3 “Masonry compression”, [BS] A108.5 “Wall tension anchors”. [BS] A108.6 “Foundations”. [BS] A109.2 “Selection of procedure”, [BS] A110.1 “Minimum design lateral forces”, [BS] A110.2 “Seismic forces on elements of structures”, [BS] A110.3 “In-plane loading of URM shear walls and frames”, [BS] A110.4 “Redundancy and overstrength factors”, [BS] A111.1 “Limits for the application of this procedure”, [BS] A111.2 “Seismic forces on elements of structures”, [BS] A111.3.1 “Crosswall definition”, [BS] A111.4.2 “Demand-capacity ratios”, [BS] A111.5 “Diaphragm shear transfer”, [BS] A111.6.1 “Wall story force”, [BS] A111.6.2 “Wall story shear”, [BS] A111.6.4 “New seismic force-resisting elements”, [BS] A111.8 “Open-front design procedure”, [BS] A112.2 “In-plane shear of unreinforced masonry walls”, [BS] A112.2.2 “Shear walls with openings”, [BS] A112.3 “Plywood-sheathed shear walls”, [BS] A112.4.1 “Seismic-force distribution”, [BS] A112.4.2 “Moment-resisting frames”, SECTION A113 “DETAILED BUILDING SYSTEM DESIGN REQUIREMENTS”, [BS] A113.1.2 “Anchor requirements”, [BS] A113.1.3 “Minimum wall anchorage”, [BS] A113.2 “Diaphragm shear transfer”, [BS] A113.6 “Parapets”, TABLE A1-B “ALLOWABLE VALUE OF HEIGHT-TO-THICKNESS RATIO OF UNREINFORCED MASONRY WALLS”, TABLE A1-E “STRENGTH VALUES OF NEW MATERIALS USED IN CONJUNCTION WITH</p>		
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		<p>EXISTING CONSTRUCTION". Adds new Standard ASTM C1531-15, "Standard Test Methods for In Situ Measurement Of Masonry Mortar Joint Shear Strength Index". Adds new definitions "BED JOINT", "DETAILED BUILDING SYSTEM ELEMENTS", "HEAD JOINT". Modifies definition "[BS] CROSSWALL", "[BS] FLEXIBLE DIAPHRAGM", "[BS] OPEN FRONT", "[BS] RIGID DIAPHRAGM", "[BS] UNREINFORCED MASONRY (URM)", "[BS] UNREINFORCED MASONRY (URM) WALL", "[BS] UNREINFORCED MASONRY BEARING WALL". Deletes [BS] A106.1 "General", [BS] A107.5 "Reports".</p> <p>Appendix A1 was first introduced to the legacy code UCBC by the proponent (SEAOC) in or about 1990. During the intervening years, various standards have been developed with practical considerations to users of the Appendix A1 in retrofitting URM buildings. Appendix A1 closely aligns with the ASCE 41-13 in Reduced Performance Objective, a Collapse Prevention Performance level (S-5) for BSE-1E Seismic Hazard Level demands. The special procedure under Appendix A1 is consistent with the Tier 2 deficiency-based procedures of ASCE 41-13 Chapter 5 for this Performance Objective. An <i>Ad Hoc</i> Committee was convened under the direction of SEAOC Existing Building Committee. The <i>Ad Hoc</i> Committee was chaired by Fred Turner, Staff Structural Engineer with the California Alfred E. Alquist Seismic Safety Commission, and who also chairs ASCE 41-17 Masonry Team. Participants in the Ad Hoc Committee includes delegates from Structural Engineers Associations of California and of Washington. The proposed modifications are essentially editorial, including removal of text where ASTM standards are available, and coordination between the Appendix A1 and ASCE 41 chapter 15. Committee Reason: The proposed modification restores the original language of Item 3 with a slight editorial modification. The phrase "substantiating research data or engineering judgment" gives the code official some guidance about when to approve materials, and gives some authority to require research or engineering data to support the use of unusual materials. The word "new" is deleted so that the item will</p>		
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		<p>apply to any material that isn't specified in the code. Proposal EB2-15 in Group A established that the term "code official" would be used consistently in the IEBC instead of "building official"</p> <p><b>Cost Impact: Will increase the cost of construction.</b> No cost impact for URM buildings six stories or less. For buildings taller than six stories, the explicit limit serves to guide user to use the body of International Existing Building Code. The updated definition for unreinforced masonry wall, based on whether wall reinforcement meets the building code requirements for reinforced masonry walls, will have a cost impact. As a minimum, lightly reinforced masonry walls need to be evaluated by a design professional in meeting the minimum life-safety and performance objectives intended in the building code. This will increase the cost to engage a design professional, but will have no overall impact on construction cost.</p>														
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<table border="1"> <thead> <tr> <th></th> <th>TAC</th> <th>Cmsn.</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> No Action Needed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Overlapping provisions</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>		TAC	Cmsn.	<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>			
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<b>EB 60-16</b>	[BS] A301.2	<p>Modifies Section [BS] A301.2 "Scope". The purpose of this code change is to coordinate the exceptions to Section A303 with the Group R occupancies and uses in the IBC. The original scope of this appendix in the UBC was limited to single-family homes, duplexes, and other small congregate residences. Proposal EB78-04/05 modified the scope and exception to replace the reference to UBC Group R, Division 1 with the what was intended to be the appropriate Group R categories in the IBC. The modification was not quite correct.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction The original intent was for the provisions of Appendix A3 to apply to single family homes, including small group homes,</p>	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed Seismic provisions.</b>												

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		for reasons of public health and safety. This proposal restores that intent. This is an allowance for group homes to utilize Appendix A3, not an additional requirement.			
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>TAC</b> <input type="checkbox"/> No Action Needed <input type="checkbox"/> Overlapping provisions	<b>Cmsn.</b> <input type="checkbox"/> <input type="checkbox"/>
<b>EB 61-16</b>	[BS] A304.3.1 (New) [BS] Table A3-A	Modifies text of Section [BS] A304.3.1 "Existing perimeter foundations". Modifies text of Table [BS] TABLE [BS] TABLE A3-A "SILL PLATE ANCHORAGE AND CRIPPLE WALL BRACING". This code change will permit alternative methods of fastening the floor framing to the foundation system. The modification adds the word "minimum" so that the it won't require a connection capacity of exactly 900 pounds.  <b>Cost Impact:</b> Will not increase the cost of construction This proposal will not increase the cost of construction. It simply provides for an alternate type of connection to be provided, at the choice of the designer, installer, or homeowner.	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed Seismic provisions.</b>	
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>TAC</b> <input type="checkbox"/> No Action Needed <input type="checkbox"/> Overlapping provisions	<b>Cmsn.</b> <input type="checkbox"/> <input type="checkbox"/>
<b>EB 6-15</b>	301.1	Modifies text of Section 301.1 "General". Adds new language in the exception changes Alteration to Alterations and the requirement to comply with Section 403.2 and 1401.3.3. The exception refers only to the work area method for alterations in flood hazard areas. The prescriptive and performance methods have provisions similar to Section 701.3, so this exception should also refer to them.	Same as change between 2015 IEBC and 2018 IEBC		

Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:

a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design

		<b>Cost Impact:</b> will not increase cost of construction because it <b>adds alternatives for alterations</b> in flood hazard areas.		
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<b>TAC Action</b> Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> <b>Others (Explain):</b> <input type="text"/>	<b>Commission Action</b> Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> <b>Others (Explain):</b> <input type="text"/>		<b>TAC</b>	<b>Cmsn.</b>
		<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>

<b>EB 6-16</b>	(New) 202 [BS] 907.4.2	Adds new Definition "SUBSTANTIAL STRUCTURAL ALTERATION". Modifies text of Section [BS] 907.4.2 "Substantial structural alteration". The proposal takes existing wording from Section 907.4.2 that is already written as a de facto definition and makes into an actual definition in Chapter 2. This simplifies Section 907.4.2 and improves the consistency of the code with respect to similar concepts and definitions. Section 907.4.4, which references the term already, need not be revised. In making the change, some redundant commentary-like text (about tributary areas and listing types of gravity load carrying elements) is removed for clarity, with no loss of substance.  <b>Cost Impact:</b> Will not increase the cost of construction The proposal is <b>an editorial clarification</b> so there are not changes in construction requirements.	Same as change between 2015 IEBC and 2018 IEBC	
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<b>TAC Action</b> Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> <b>Others (Explain):</b> <input type="text"/>	<b>Commission Action</b> Accommodate Florida Specific Need: <b>YES (Select Criteria)</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> <b>Others (Explain):</b> <input type="text"/>		<b>TAC</b>	<b>Cmsn.</b>
		<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>

Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:

a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design

<p><b>EB 68-15 Part I</b></p>	<p>(New) 1106 (New) 1106.1 (New) 1106.1.1 (New) 1106.1.2 (New) 1401.2.3.1 (New) 402.6</p>	<p>Adds new section 1106 “STORM SHELTERS”. THIS IS A 2 PART CODE CHANGE PROPOSAL. BOTH PARTS WERE HEARD BY THE IEBC COMMITTEE. As documented in the proposal that created the original requirements for installation of storm shelters in schools for the 2015 IBC, even schools built to modern building codes are susceptible to collapse during tornadoes. Another positive trend in school shelter construction is that some of these facilities are also being made available as public shelters. At these shelters, the doors are automatically unlocked when the tornado siren sounds. The proposal was approved as it provides necessary guidance on how to address storm shelters for additions. Additions are treated as new buildings and the provisions for storm shelters need to correlate with the IBC. There was some concern that perhaps the formatting could be simplified with a more general reference to the IBC for the detailed requirements. Also, since this is applicable to all three methods potentially this could be addressed in Chapter 3.</p> <p><b>Cost Impact: Will increase the cost of construction.</b> This proposal will increase the cost of construction. The most recent information on costs is available in FEMA P-361, Design and Construction Guidance for Community Safe Rooms (Second Edition, August, 2008).</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>				
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>			<p><b>TAC</b></p>	<p><b>Cmsn.</b></p>	
<p><b>EB 68-15 Part II</b></p>		<p>423 423.1.1 423.4 (New) 423.4.1 (New) 423.4.2</p>	<p>Modifies Section 423.1.1 “Scope”, 423.4 “Group E occupancies”. Adds new Section 423.4.1 “Required occupant capacity”, 423.4.2 “Location”. THIS IS A 2 PART CODE CHANGE PROPOSAL. BOTH PARTS WERE HEARD BY THE IEBC COMMITTEE. As documented in the proposal that created the original requirements for installation of storm</p>	<p>Same as change between 2015 IEBC and 2018 IEBC</p>			

Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:

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		shelters in schools for the 2015 IBC, even schools built to modern building codes are susceptible to collapse during tornadoes. That proposal described a number of schools destroyed or severely damaged in several 2011 tornadoes in Missouri, Georgia, and Alabama. As documented in the National Institute of Standards and Technology's final report on its technical investigation of the Joplin, Missouri tornado of May 22, 2011, that one storm severely damaged or destroyed 10 of the 20 public schools in the City of Joplin, and several parochial schools.		
		<b>Cost Impact: Will increase the cost of construction.</b> This proposal will increase the cost of construction. The most recent information on costs is available in FEMA P-361, Design and Construction Guidance for Community Safe Rooms (Second Edition, August, 2008).		

<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>	<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>TAC</b>	<b>Cmsn.</b>	
		<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>	

<b>EB 7-16</b>	301.1	Modifies text of 301.1 "General". This proposal retains the exception that allows the code official to waive certain architectural and other requirements that the IEBC would normally trigger in alteration projects. It removes that exception, however, regarding structural provisions. The current exception already does not apply to alterations in flood hazard areas (which sometimes trigger structural improvements) or to substantial structural alterations. So the proposal does not change those cases at all.  <b>Cost Impact:</b> Will not increase the cost of construction This proposal will not increase the cost of construction, but it could, hypothetically, limit the cases in which the code official could effectively reduce the cost of construction by waiving structural safety requirements. In practice, no increase in the	Same as change between 2015 IEBC and 2018 IEBC	
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Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:

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		cost of construction should be expected, however, since the proposal does not change any of the code's provisions, but only changes what was a discretionary waiver.				
<b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/>		<input type="checkbox"/> No Action Needed <input type="checkbox"/> Overlapping provisions	TAC <input type="checkbox"/> <input type="checkbox"/>	Cmsn. <input type="checkbox"/> <input type="checkbox"/>
<b>EB 8-15</b>	301.1 [BS] 301.1.4 [BS] 301.1.4.1 [BS] Table 301.1.1.4.1 [BS] 301.1.4.2 [BS] Table 301.1.1.4.2 NEW 303 New 303.1 New 303.1.1 New Table [BS] 303.1.1 New [BS] 303.1.2	Modification of Section 301 "Administration", Section [BS] 303.1 "General", [BS] 303.1.1 "Compliance with International Building Code-level seismic forces". Modifies [BS] 303.1.2 "Compliance with reduced International Building Code-level seismic forces." Modifies text of 303.1.1 "PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES", Table [BS] 303.1.2 "PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES". Adds text of Section 303 "SEISMIC EVALUATION AND DESIGN PROCEDURES".  This proposal will move the seismic evaluation and design procedures out of the same section of 330 and code hierarchy as the three compliance methods and places it in its own section New 303. Modification by public comment.  <b>Cost Impact:</b> Code proposal is only to clarify the existing code requirements through a relocation (reorganization) of code sections, so there is no intended increase or decrease expected by approving this proposal.	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed – seismic provisions.</b>		

Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:

a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design

TAC Action		Commission Action		TAC	Cmsn.
Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):		Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):		<input type="checkbox"/> No Action Needed	<input type="checkbox"/>
				<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>
<b>EB 8-16</b>	A501 A502 A503 A504 A505 A506 A507 [BS] 301.1.4.2	Modifies text of [BS] 301.1.4.2 “Compliance with reduced International Building Code-level seismic forces”, Deletes Chapter Part A5 “EARTHQUAKE HAZARD REDUCTION IN EXISTING CONCRETE BUILDINGS”. This proposal affects Appendix A, Chapter 5 regarding compliance with codes related to seismic forces. This proposal deletes Chapter A5 from Appendix A. With recent revisions to both Chapter A5 and ASCE 41, this appendix chapter is no longer needed and provides no benefit relative to the procedures in ASCE 41 that are already allowed by the IEBC.  <b>Cost Impact:</b> Will not increase the cost of construction This is redundancy with reference standard, so there will be no change in construction	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed</b> Seismic provisions.	
TAC Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):		Commission Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> <b>NO:</b> <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain):		<input type="checkbox"/> No Action Needed	<input type="checkbox"/>
				<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>
<b>EB 9-16</b>	[BS] 301.1.4.2	Modifies text of [BS] 301.1.4.2 “Compliance with reduced International Building Code-level seismic forces”, Modifies text of Table [BS] 301.1.4.2 “PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES”. This proposal affects Appendix A, Chapter 5 regarding compliance with codes related to seismic forces and alters Table [BS] 301.1.4.2. This proposal updates the IEBC to be consistent with the revised performance objective definitions and terminology used in	Same as change between 2015 IEBC and 2018 IEBC	<b>No action needed</b> Seismic provisions.	

*Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:*

*a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design*

		<p>ASCE 41-17. For "reduced IBC-level seismic forces" the 2015 IEBC referenced the "Basic Performance Objective for Existing Buildings" (BPOE) using the BSE-1E level hazard and correlating performance levels by Risk Category.</p> <p><b>Cost Impact:</b> Will not increase the cost of construction The IEBC revisions and related revisions in ASCE 41-17 will not have a significant impact on construction cost except when compared to seismic evaluation and retrofit in the central and eastern United States performed using ASCE 41-13 as referenced in the 2015 IEBC.</p>					
<p><b>TAC Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p><b>Commission Action</b> Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>			<p><b>TAC</b></p>	<p><b>Cmsn.</b></p>	
				<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>	

**Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:**

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## Code Change No: **EB2-15**

### Original Proposal

**Section:** 302.3, 401.2.1, 401.3, 407.1, 407.1.1, 408.2, [A] 104.2.1, [BS] 404.2.1, [BS] A106.2, [BS] A107.1, [BS] A108.1, [BS] A113.7, [BS] A206.2, [BS] A505.1

**Proponent:** Maureen Traxler, City of Seattle, representing City of Seattle Dept of Planning & Development (maureen.traxler@seattle.gov)

**Revise as follows:**

**[A] 104.2.1 Determination of substantially improved or substantially damaged existing buildings and structures in flood hazard areas.** For applications for reconstruction, rehabilitation, repair, alteration, addition or other improvement of existing buildings or structures located in flood hazard areas, the building official shall determine where the proposed work constitutes substantial improvement or repair of substantial damage. Where the building official determines that the proposed work constitutes substantial improvement or repair of substantial damage, and where required by this code, the building code official shall require the building to meet the requirements of Section 1612 of the *International Building Code*.

**302.3 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building-code official to be unsafe.

**401.2.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building-code official to be unsafe per Section 115.

**401.3 Dangerous conditions.** The building-code official shall have the authority to require the elimination of conditions deemed *dangerous*.

**[BS] 404.2.1 Evaluation.** The building shall be evaluated by a *registered design professional*, and the evaluation findings shall be submitted to the building-official-code official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the *International Building Code* for wind and earthquake loads.

Wind loads for this evaluation shall be those prescribed in Section 1609 of the *International Building Code*. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613 of the *International Building Code*. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake evaluation requirement.

**407.1 Conformance.** No change shall be made in the use or occupancy of any building unless such building is made to comply with the requirements of the *International Building Code* for the use or occupancy. Changes in use or occupancy in a building or portion thereof shall be such that the existing building is no less complying with the provisions of this code than the existing building or structure was prior to the change. Subject to the approval of the building-code official, the use or occupancy of *existing buildings* shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

**Exception:** The building need not be made to comply with the seismic requirements for a new structure unless required by Section 407.4.

**407.1.1 Change in the character of use.** A change in occupancy with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, without approval of the ~~building official~~ code official. Compliance shall be only as necessary to meet the specific provisions and is not intended to require the entire building be brought into compliance.

**408.2 Life safety hazards.** The provisions of this code shall apply to historic buildings judged by the ~~building code~~ official to constitute a distinct life safety hazard.

**[BS] A106.2 Existing materials.** Existing materials used as part of the required vertical load-carrying or lateral forceresisting system shall be in sound condition, or shall be repaired or removed and replaced with new materials. All other unreinforced masonry materials shall comply with the following requirements:

1. The lay-up of the masonry units shall comply with Section A106.3.2, and the quality of bond between the units has been verified to the satisfaction of the building official;
2. Concrete masonry units are verified to be load-bearing units complying with ASTM C 90 or such other standard as is acceptable to the ~~building code~~ official; and
3. The compressive strength of plain concrete walls shall be determined based on cores taken from each class of concrete wall. The location and number of tests shall be the same as those prescribed for tensile-splitting strength tests in Sections A106.3.3.3 and A106.3.3.4, or in Section A108.1.

The use of materials not specified herein or in Section A108.1 shall be based on substantiating research data or engineering judgment, with the approval of the ~~building code~~ official.

**[BS] A107.1 Pointing.** Preparation and mortar pointing shall be performed with special inspection.

**Exception:** At the discretion of the ~~building code~~ official, incidental pointing may be performed without special inspection.

**[BS] A108.1 Values.**

1. Strength values for existing materials are given in Table A1-D and for new materials in Table A1-E.
2. Capacity reduction factors need not be used.
3. The use of new materials not specified herein shall be based on substantiating research data or engineering judgment, with the approval of the ~~building code~~ official.

**[BS] A113.7 Veneer.**

1. Veneer shall be anchored with approved anchor ties conforming to the required design capacity specified in the building code and shall be placed at a maximum spacing of 24 inches (610 mm) with a maximum supported area of 4 square feet (0.372 m<sup>2</sup>).

**Exception:** Existing anchor ties for attaching brick veneer to brick backing may be acceptable, provided the ties are in good condition and conform to the following minimum size and material requirements.

Existing veneer anchor ties may be considered adequate if they are of corrugated galvanized iron strips not less than 1 inch (25 mm) in width, 8 inches (203 mm) in length and  $\frac{1}{16}$  inch (1.6 mm) in thickness, or the equivalent.

2. The location and condition of existing veneer anchor ties shall be verified as follows:

- 2.1 An approved testing laboratory shall verify the location and spacing of the ties and shall submit a report to the building-code official for approval as part of the structural analysis.
- 2.2 The veneer in a selected area shall be removed to expose a representative sample of ties (not less than four) for inspection by the building-code official.

**[BS] A206.2 Special requirements for wall anchorage systems.** The steel elements of the wall anchorage system shall be designed in accordance with the building code without the use of the 1.33 short duration allowable stress increase when using allowable stress design.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

**Exception:** Existing cast-in-place shear anchors are allowed to be used as wall anchors if the tie element can be readily attached to the anchors, and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing and through analysis showing that the bolts are capable of resisting the total shear load (including dead load) while being acted upon by the maximum tension force due to an earthquake. Criteria for analysis and testing shall be determined by the building-code official.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading.

Attaching the edge of plywood sheathing to steel ledgers is not considered compliant with the positive anchoring requirements of this chapter. Attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this chapter unless testing and/or analysis are performed to establish shear values for the attachment perpendicular to the edge of the deck. Where steel decking is used as a wall anchor system, the existing connections shall be subject to field verification and the new connections shall be subject to special inspection.

**[BS] A505.1 General.** Structures conforming to the requirements of the ASCE 41 Chapter 4, Screening Phase, are permitted to be shown to be in conformance to this chapter by submission of a report to the building-code official, as described in this section.

**Reason:** The IEBC defines the term "code official" but it then uses both "building official" and "code official." Both terms are used in other International codes, but none of the codes uses both. "Code official" is more appropriate for the IEBC because the IEBC addresses more than Building Code issues. It includes mechanical sections—the IMC uses the term "code official." It includes plumbing sections—the IPC uses the term "code official." The term "code official" is defined in Chapter 2, and is the more general term.

Note that Figure A3-1 and A3-2 also contain the term "building official" and should also be revised to "code official." The figures could not be added to the proposal.

**Cost Impact:** Will not increase the cost of construction  
This is an editorial change that will not affect the cost of construction.

**Staff Note:** Figures A3-1 and A3-2 will be revised to use the term "code official" in place of "building official" if this code change is approved based upon the intent of this proposal as noted in the proponents reason statement.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** There was concern that a reference to other than the "building official" would cause confusion. A building official is the most appropriate enforcement entity for an existing building code.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB2-15**

**AS**



## Code Change No: **EB4-15**

### Original Proposal

#### Section: 202 (New)

**Proponent:** Maureen Traxler, representing City of Seattle Dept of Planning & Development (maureen.traxler@seattle.gov)

**[A] EXISTING BUILDING.** A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

#### Add new text as follows:

**[A] EXISTING STRUCTURE** A structure erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued. For application of provisions in flood hazard areas, an existing structure is any building or structure for which the start of construction commenced before the effective date of the community's first flood plain management code, ordinance or standard.

**Reason:** Reason: The IEBC uses both the terms "existing building" and "existing structure" but only defines "existing building." Some code sections use "existing building"; some use "existing structure"; other sections use "existing building or structure." Section 501.1 is an example. "501.1 Scope. The provisions of this chapter shall ... apply to the alteration, repair, addition and change of occupancy of existing structures.... The work performed on an existing building shall be classified in accordance with this chapter." After reviewing the use of the terms "existing building" and "existing structure" in the IBC and IEBC, we concluded that the terms are used interchangeably, and that including both definitions is the most reasonable way to coordinate the use of these terms. This proposal adds the IBC definition of "existing structure" to the IEBC. The definition for "existing building" will be modified to include a sentence about flood hazard areas that is copied from the definition of "existing structure" in Group B. The definition for "existing building" is controlled by the Admin committee.

The IBC defines "existing structure" but not "existing building." This proposal is the first step in correlating the two definitions in the IEBC and IBC. Changes to the IBC will be considered in Group B; if this proposal is successful, we will propose similar changes to the IBC.

**Cost Impact:** Will not increase the cost of construction  
This proposal will not affect the cost of construction because it merely adds a definition.

**Staff note:** The term existing building is maintained by the Administrative Committee. This is an errata to the IEBC.

### Report of Committee Action Hearings

#### Committee Action:

**Approved as Submitted**

**Committee Reason:** The addition of the term "existing structure" was appropriate as the term is used interchangeably with the term "existing building" within the IEBC. This clarifies that the meaning of the terms is essentially the same with the current exception to the fact that the definition from the IBC has language for the flood provisions. This is intended to be revised in the Group B cycle by the proponent.

#### Assembly Action:

**None**

### Final Action Results

**EB4-15**

**AS**

**EB4-15**

**EXISTING STRUCTURES (for flood hazard areas).** See Section 1612.2 of the *Florida Building Code, Building*.

## Code Change No: **EB6-15**

### Original Proposal

#### Section: 301.1

**Proponent:** Maureen Traxler, representing City of Seattle Dept of Planning & Development (maureen.traxler@seattle.gov)

#### Revise as follows:

**301.1 General.** The *repair, alteration, change of occupancy, addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic forceresisting system of an *existing building* subject to *repair, alteration, change of occupancy, addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

**Exception:** Subject to the approval of the *code official, alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.4. New structural members added as part of the *alteration* shall comply with the *International Building Code. Alteration-Alterations* of *existing buildings in flood hazard areas* shall comply with Section 403.2, 701.3 or 1401.3.3.

**Reason:** This exception refers only the work area method for alterations in flood hazard areas. The prescriptive and performance methods have provisions similar to Section 701.3, so this exception should also refer to them.

**Cost Impact:** Will not increase the cost of construction  
This proposal will not increase the cost of construction because it adds alternatives for alterations in flood hazard areas.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal simply provides all the relevant references to the flood provisions found in the IEBC. This is a more comprehensive approach that will better address all methods in the IEBC.

**Assembly Action:**

**None**

### Final Action Results

**EB6-15**

**AS**

## Code Change No: **EB8-15**

### Original Proposal

**Section(s):** 301.1, [BS] 301.1.4, [BS] 301.1.4.1, [BS] Table 301.1.1.4.1, [BS] 301.1.4.2, [BS] Table 301.1.1.4.2, 303 (New)

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee(bcac@iccsafe.org)

**Revise as follows:**

### SECTION 301 ADMINISTRATION

**301.1 General.** The *repair, alteration, change of occupancy, addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an *existing building* subject to *repair, alteration, change of occupancy, addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section ~~301.1.4~~303.1 regardless of which compliance method is used.

**Exception:** Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.4. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations of existing buildings in flood hazard areas* shall comply with Section 701.3.

**301.1.1 Prescriptive compliance method.** *Repairs, alterations, additions and changes of occupancy* complying with Chapter 4 of this code in buildings complying with the *International Fire Code* shall be considered in compliance with the provisions of this code.

**301.1.2 Work area compliance method.** *Repairs, alterations, additions, changes in occupancy and relocated buildings* complying with the applicable requirements of Chapters 5 through 13 of this code shall be considered in compliance with the provisions of this code.

**301.1.3 Performance compliance method.** *Repairs, alterations, additions, changes in occupancy and relocated buildings* complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.

**Add new section as follows:**

### SECTION 303 SEISMIC EVALUATION AND DESIGN PROCEDURES

**Renumber subsequent sections:**

[BS] ~~301.1.4~~ 303.1 **Seismic evaluation and design procedures** General. (No change to text)

[BS] ~~301.1.4.1~~ 303.1.1 **Compliance with International Building Code-level seismic forces**. (No change to text)

**TABLE [BS] ~~3301.1.4.1~~ 303.1.1  
PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH INTERNATIONAL BUILDING  
CODE-LEVEL SEISMIC FORCES**

(No change to Table)

**[BS] ~~301.1.4.2~~ 303.1.2 Compliance with reduced International Building Code-level seismic  
forces. (No change to text)**

**TABLE [BS] ~~301.1.4.2~~ 303.1.2  
PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED  
INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES**

(No change to Table)

**Reason:** The code change proposal is to move the seismic evaluation and design procedures out of the same section and code hierarchy as the three compliance methods and places it in its own section. With the location of the seismic evaluation and design procedure reference in 301.1, it can potentially confuse the code user since two items need to happen in the current 301; choose a method and do a seismic evaluation.

Since the topic is separate and distinct, the proposal moves it to a separate section to ensure it is independent of the compliance method choice by the applicant.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction

Cost impact: Code proposal is only to clarify the existing code requirements through a relocation (reorganization) of code sections, so there is no intended increase or decrease expected by approving this proposal.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was approved as the format of the chapter will be clearer. Section 301 is intended to describe the three compliance methods. The seismic criteria are to be applied to all three methods where referenced and need to be located in a standalone section.

**Assembly Action:**

**None**

**Final Action Results**

**Public Comment 1:**

**David Bonowitz, David Bonowitz, S.E., representing Existing Buildings Committee, National Council of Structural Engineers Associations (dbonowitz@att.net) requests Approve as Modified by this Public Comment.**

**301.1 General.** The *repair, alteration, change of occupancy, addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. ~~Where this code requires consideration of the seismic force-resisting system of an existing building subject to repair, alteration, change of occupancy, addition or relocation of existing buildings, the seismic evaluation and design shall be based on Section 301.1.4-303.1 regardless of which compliance method is used.~~

**Exception:** Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.4. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations of existing buildings in flood hazard areas* shall comply with Section 701.3.

**303.1 General** Where required, seismic evaluation or design shall be based on the procedures and criteria in this section, regardless of which compliance method is used.

**[BS] 303.1 General.** The seismic evaluation and design shall be based on the procedures specified in the *International Building Code* or ASCE 41. The procedures contained in Appendix A of this code shall be permitted to be used as specified in Section 303.1.2.

**Commenter's Reason:** The basic idea of EB 8 is good, and we support it: For clarity and usability, move the seismic criteria from section 301.1.4 into their own new section 303. However, in doing so, EB 8 missed two important cleanups to go with the move. This comment completes the intent of EB 8:

1. Move the last sentence of 301.1 into the new section 303 where it belongs, just before the seismic criteria sections themselves. With the move, the sentence can also be editorially simplified, clarified, and corrected as shown. This move is also important because it removes the confusion about whether the exception to 301.1 applies to the seismic criteria -- it obviously does not, as was pointed out at the hearings by several committee members, and as any quick read will show. If there is any doubt remaining about whether this sentence is meant to go with the seismic criteria and is not subject to the exception, we point out that the sentence was first added to the IEBC -- without any exception -- in 2009, when it and the seismic criteria were still in section 101.5. Only in 2012 were both the sentence and the criteria moved into section 301.
2. By moving this sentence into new 303.1, replace the now redundant language of current 301.1.4 (new 303.1). This language is redundant because it merely names the documents that are going to be named and specified in greater detail in the sections to come (new 303.1.1 and 303.1.2).

### Final Hearing Results

EB8-15

AMPC1

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## Code Change No: **EB10-15**

### Original Proposal

**Section: 301.1 (New), 301.2 (New), 301.1, 301.1.1, 301.1.2, 301.1.3, 401.1, 401.1.1, 401.2.2, 404, 501.1, 501.1.1, 502, 1401.1, 1401.1.1, 1401.2.4**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee(bcac@iccsafe.org)

**Relocate Chapter 6 as follows:**

#### **6 4 REPAIRS**

*(Renumber Subsequent sections in this Chapter)*

*(Renumber Chapters 4 and 5)*

**Revise as follows:**

### **SECTION 301 ADMINISTRATION**

**301.1 General.** The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with Section 301.2 or 301.3, as applicable.

**301.2 Repairs** Repairs shall comply with the requirements of Chapter 4.

**~~301.1.4~~301.3 General-Alteration, change of occupancy, addition or relocation.** The ~~repair, alteration, change of occupancy, addition~~ or relocation of all existing buildings shall comply with one of the methods listed in Sections ~~301.1.1-301.3.1~~ through ~~301.1.3-301.3.3~~ as selected by the applicant. Sections ~~301.1.1-301.3.1~~ through ~~301.1.3-301.3.3~~ shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an existing building subject to ~~repair, alteration, change of occupancy, addition~~ or relocation of existing buildings, the seismic evaluation and design shall be based on Section ~~301.1.4-301.3.4~~ regardless of which compliance method is used.

**Exception:** Subject to the approval of the *code official*, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural alteration as defined in Section 907.4.4. New structural members added as part of the alteration shall comply with the *International Building Code*. Alterations of existing buildings in flood hazard areas shall comply with Section 701.3.

**~~301.1.4~~301.3.1 Prescriptive compliance method.** ~~Repairs, alterations~~ Alterations, additions and changes of occupancy complying with Chapter 45 of this code in buildings complying with the *International Fire Code* shall be considered in compliance with the provisions of this code.

**~~301.1.2~~301.3.2 Work area compliance method.** ~~Repairs, alterations~~ Alterations, additions, changes in occupancy and relocated buildings complying with the applicable requirements of Chapters 5-6 through 13 of this code shall be considered in compliance with the provisions of this code.

**~~301.1.3~~301.3.3 Performance compliance method.** ~~Repairs, alterations~~ Alterations, additions, changes in occupancy and relocated buildings complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.



(Renumber subsequent sections)

**401.1 Scope.** The provisions of this chapter shall control the *alteration, repair, addition and change of occupancy* or relocation of *existing buildings* and structures, including *historic buildings* and structures as referenced in Section ~~301.1.4~~ 301.3.1.

**Exception:** Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

**401.1.1 Compliance with other methods.** *Alterations, repairs, additions and changes of occupancy* to or relocation of, *existing buildings* and structures shall comply with the provisions of this chapter or with one of the methods provided in Section ~~301.1~~ 301.3.

**401.2.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for ~~repairs and alterations~~, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

**Delete without substitution:**

## **SECTION 404- REPAIRS**

**404.1 General.** Buildings and structures, and parts thereof, shall be repaired in compliance with Sections 401.2 and 404. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by Section 401.2, ordinary repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

**[BS] 404.2 Substantial structural damage to vertical elements of the lateral force-resisting system.** A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 404.2.1 through 404.2.3.

**Exceptions:**

- ~~1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.~~
- ~~2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.~~

**[BS] 404.2.1 Evaluation.** The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the building official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the International Building Code for wind and earthquake loads.

Wind loads for this evaluation shall be those prescribed in Section 1609 of the International Building Code. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613 of the International Building Code. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake evaluation requirement.

~~**[BS] 404.2.2 Extent of repair for compliant buildings.** If the evaluation establishes compliance of the predamage building in accordance with Section 404.2.1, then repairs shall be permitted that restore the building to its predamage state.~~

~~**[BS] 404.2.3 Extent of repair for noncompliant buildings.** If the evaluation does not establish compliance of the predamage building in accordance with Section 404.2.1, then the building shall be rehabilitated to comply with applicable provisions of the International Building Code for load combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by the International Building Code. Earthquake loads for this rehabilitation design shall be those required for the design of the predamage building, but not less than 75 percent of those prescribed in Section 1613 of the International Building Code. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of the International Building Code for new buildings of similar structure, purpose and location. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake rehabilitation requirement.~~

~~**[BS] 404.3 Substantial structural damage to gravity load-carrying components.** Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions of the International Building Code for dead and live loads. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Existing gravity load-carrying structural elements shall be permitted to be designed for live loads approved prior to the damage. If the approved live load is less than that required by Section 1607 of the International Building Code, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Nondamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated or shown to have the capacity to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of the International Building Code for new buildings of similar structure, purpose and location.~~

~~**[BS] 404.3.1 Lateral force-resisting elements.** Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 404.2.1 and, if noncompliant, rehabilitated in accordance with Section 404.2.3.~~

**Exceptions:**

- ~~1. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.~~
- ~~2. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.~~

~~**[BS] 404.4 Less than substantial structural damage.** For damage less than substantial structural damage, repairs shall be allowed that restore the building to its predamage state. New structural members and connections used for this repair shall comply with the detailing provisions of the International Building Code for new buildings of similar structure, purpose and location.~~

~~**[BS] 404.5 Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any repair that constitutes substantial improvement or repair of substantial damage of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any repairs that do~~

~~not constitute substantial improvement or repair of substantial damage of the existing structure are not required to comply with the flood design requirements for new construction.~~

**Revise as follows:**

**501.1 Scope.** The provisions of this chapter shall be used in conjunction with Chapters ~~6-7~~ through 13 and shall apply to the *alteration*, ~~repair~~, *addition* and *change of occupancy* of existing structures, including historic and moved structures, as referenced in Section 301.1.2. The work performed on an *existing building* shall be classified in accordance with this chapter.

**501.1.1 Compliance with other alternatives.** ~~Alterations, repairs, additions and changes of occupancy~~ to existing structures shall comply with the provisions of Chapters ~~6-7~~ through 13 or with one of the alternatives provided in Section 301.1.

**Delete without substitution:**

**SECTION  
~~502 REPAIRS~~**

**502.1 Scope.** ~~Repairs, as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.~~

**502.2 Application.** ~~Repairs shall comply with the provisions of Chapter 6.~~

**502.3 Related work.** ~~Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the provisions of Chapter 7, 8, 9, 10 or 11.~~

**Revise as follows:**

**1401.1 Scope.** The provisions of this chapter shall apply to the *alteration*, ~~repair~~, *addition* and *change of occupancy* of existing structures, including historic and moved structures, as referenced in Section ~~304.4.3~~ 301.3.3. The provisions of this chapter are intended to maintain or increase the current degree of public safety, health and general welfare in *existing buildings* while permitting ~~repair, alteration, addition and change of occupancy~~ without requiring full compliance with Chapters ~~5-6~~ through 13, except where compliance with other provisions of this code is specifically required in this chapter.

**1401.1.1 Compliance with other methods.** ~~Alterations, repairs, additions and changes of occupancy~~ to existing structures shall comply with the provisions of this chapter or with one of the methods provided in Section ~~304.4~~ 301.3.

**1401.2.4 Alterations and repairs.** An *existing building* or portion thereof that does not comply with the requirements of this code for new construction shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. If, in the *alteration* or *repair*, the current level of safety or sanitation is to be reduced, the portion altered or ~~repaired~~ shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33 of the *International Building Code*.

**Reason:** The purpose of this code change is to remove the topic of repair from the three compliance methods and to move repair into one standalone chapter.

The topic of repairs is fairly simple but the way the three methods handle the topic very differently:

- Prescriptive method- Specific requirements on structural repairs only, general statement on other topics with code official discretion on 'dangerous' situations
- Work area method- Specific requirements for structural (identical to prescriptive method), building materials, fire protection, accessibility, mechanical, plumbing, and electrical.
- Performance method- General requirements only and reference to the IBC for thresholds.

The IEBC has three different methods to give choices in the design of existing buildings. The reason for the choice to the applicant is to give options since every existing building is different, using legacy materials and having legacy code requirements. This is not the case for repairs.

As an example, the prescriptive method would allow items like glazing in hazardous locations non-NEMA electrical receptacles in hospitals to be replaced in kind whereas the work area method sets a baseline on these items. Since repair items don't usually get a permit or inspection, there is really little need for options in replacing something for the sole purpose of it's maintenance.

The proposal moves this topic to right before the prescriptive method and the chapters would be:

- 1- Admin
- 2- Definitions
- 3- General Requirements for all compliance methods
- 4- Repairs
- 5- Prescriptive
- 6- Work Area Classification of Work
- 7- Alt. 1
- 8- Alt. 2
- 9- Alt. 3
- 10- Change of Occupancy
- 11- Additions
- 12- Historic Buildings
- 13- Relocated Buildings
- 14- Performance Method
- 15- Safeguards
- 16- Referenced Standards

One item that would generally require a building permit would be damaged buildings. However, damaged buildings only specifically address structural items of which are currently identical in the prescriptive and work area methods. Therefore, no technical change is created by this change.

The alternative to this change would be to correlate repairs in the three methods and copy them into the three applicable chapters. However, a single chapter does not remove any options currently available, is correlated for the code user, and will minimize different requirements on the same topic in future code cycles.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction

Cost impact: Code proposal is only to clarify the existing code requirements through a relocation (reorganization) of code sections, so there is no intended increase or decrease expected by approving this proposal.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal will make the repair provisions more consistent for each method. The committee felt that repairs do not require several different methods of compliance. Having a standalone chapter for repairs will make the code more clear.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB10-15**

**AS**

**EB10-15**

**[BS] 404.2.1 Evaluation.** The building shall be evaluated by a *registered design professional*, and the evaluation findings shall be submitted to the *building official*. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the *Florida Building Code, Building International Building Code* for wind and earthquake loads. Wind loads for this evaluation shall be those prescribed in Section 1609 (the HVHZ shall comply with Section 1620) of the *Florida Building Code, Building International Building Code*. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613 of the *Florida Building Code, Building International Building Code*. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake evaluation requirement.

**502.2 Application.** *Repairs* shall comply with the provisions of Chapter 6. Re-roofing shall comply with the provisions of Section 706.

## Code Change No: **EB11-15**

### Original Proposal

**Section: 301.1, 301.2 (New), 301.1.2, 301.1.3, 301.3 (New), 401.1, 401.1.1, 409, Chapter 13, 1401.1**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee(bcac@iccsafe.org)

**Relocate Chapter 13 as follows:**

#### **13-14 RELOCATED OR MOVED BUILDINGS**

*(Renumber all subsequent sections in this chapter)*

*(Renumber Chapter 14 Prescriptive Method to be Chapter 13)*

### **SECTION 301 ADMINISTRATION**

~~**301.1 General.** The *repair, alteration, change of occupancy, addition* or relocation of all existing buildings shall comply with ~~one 301.2 or 301.3~~ of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other ~~this section~~. Where this code requires consideration of the seismic ~~force~~ resisting force ~~resisting~~ system of an *existing building* subject to *repair, alteration, change of occupancy, addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section ~~301.1.4~~ 301.2.4 regardless of which compliance method is used.~~

**Exception:** Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.4. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations* of *existing buildings* in *flood hazard areas* shall comply with Section 701.3.

**Add new text as follows:**

**301.2 Repairs, alterations, change of occupancy, and additions.** *The repair, alteration, change of occupancy, or addition of all existing buildings shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.2.1 through 301.2.3 shall not be applied in combination with each other.*

**Revise as follows:**

~~**301.1.1**~~ **301.2.1 Prescriptive compliance method.** *Repairs, alterations, additions and changes of occupancy* complying with Chapter 4 of this code in buildings complying with the *International Fire Code* shall be considered in compliance with the provisions of this code.

~~**301.1.2**~~ **301.2.2 Work area compliance method.** *Repairs, alterations, additions, and changes in occupancy and relocated buildings complying with the applicable requirements of Chapters 5 through ~~43~~12 of this code shall be considered in compliance with the provisions of this code.*

~~**301.1.3**~~ **301.2.3 Performance compliance method.** *Repairs, alterations, additions, and changes in occupancy and relocated buildings complying with Chapter ~~44~~13 of this code shall be considered in compliance with the provisions of this code.*

(Renumber subsequent sections)

**Add new text as follows:**

**301.3 Relocated Buildings** Relocated buildings shall comply with the requirements of Chapter 14.

**Revise as follows:**

**401.1 Scope.** The provisions of this chapter shall control the *alteration, repair, addition and change of occupancy* ~~or relocation of existing buildings~~ and structures, including *historic buildings* and structures as referenced in Section ~~301.1.4~~ 301.2.1.

**Exception:** Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

**401.1.1 Compliance with other methods.** *Alterations, repairs, additions and changes of occupancy* ~~to or relocation of, existing buildings~~ and structures shall comply with the provisions of this chapter or with one of the methods provided in Section ~~301.1~~ 301.2.

## ~~SECTION 409~~ **MOVED STRUCTURES**

~~**409.1 Conformance.** Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.~~

(Renumber subsequent sections)

**1401.1 Scope.** The provisions of this chapter shall apply to the *alteration, repair, addition and change of occupancy* of existing structures, including historic ~~and moved~~ structures, as referenced in Section ~~301.1.3~~ 301.2.3. The provisions of this chapter are intended to maintain or increase the current degree of public safety, health and general welfare in *existing buildings* while permitting *repair, alteration, addition and change of occupancy* without requiring full compliance with Chapters 5 through ~~13~~ 12, except where compliance with other provisions of this code is specifically required in this chapter.

(Renumber subsequent sections)

**Reason:** The purpose of this code change is to adequately address relocated or moved buildings in the IEBC. Currently, the three compliance methods address relocated/moved buildings in their respective scopes. This change will relocate Chapter 13,

Relocated or Moved Buildings, and make it generally applicable for all three methods.

The topic is currently handled the following way:

Prescriptive Method- "Meet this code for new structures" [IEBC doesn't deal with new structures]

Work Area Method- Specific chapter that is not based upon the hierarchy of the work area method

Performance Method- No requirements provided

In short, the only method that has technical requirements is Chapter 13. Since the IBC covers relocated buildings in its scope, the use of new structure requirements for relocated or moved buildings is always an option anyway.

The IEBC has three different methods to give choices in the design of existing buildings. The reason for the choice to the applicant is to give options since every existing building is different, using legacy materials and having legacy code requirements. This is not the case for relocated buildings as the intent is to reuse an existing building in a different location rather than complete other rehabilitation work.

The Chapter layout would look like this:

- 1- Admin
- 2- Definitions
- 3- Prescriptive
- 4- General Requirements for all compliance methods
- 5- Work Area Classification of Work
- 6- Repairs
- 7- Alt. 1



- 8- Alt. 2
- 9- Alt. 3
- 10- Change of Occupancy
- 11- Additions
- 12- Historic Buildings
- 13- Performance Method
- 14- Relocated Buildings
- 15- Safeguards
- 16- Referenced Standards

In the alternative, a code change could be to modify the prescriptive method to have an appropriate reference to the IBC as well as the performance method to have some direction on the issue within it.

As a correlation note; if this proposal is denied by either the BCAC or the code development committee, a proposal has to go forward to repair IEBC 409.1 to reference the IBC.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction

Code proposal is only to clarify the existing code requirements through a relocation (reorganization) of code sections, so there is no intended increase or decrease expected by approving this proposal.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** Relocated or moved buildings do not require various compliance methods. Currently, Chapter 4 does a poor job of addressing such buildings. Chapter 13 is more comprehensive and should apply in all cases. Chapter 13 Relocated or Moved Buildings will simply be renumbered as Chapter 14 and the performance method will become Chapter 13. It should be noted that Section 509 should be deleted.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB11-15**

**AS**

**EB11-15****Chapter 13 Relocated or Moved Buildings****SECTION 1301  
GENERAL**

**409.1 Conformance.** ~~Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures. See Chapter 13.~~

**1401.2 Applicability.** ~~Existing structures~~ Structures existing prior to ~~[DATE TO BE INSERTED BY THE JURISDICTION. NOTE: IT IS RECOMMENDED THAT THIS DATE COINCIDE WITH THE EFFECTIVE DATE OF BUILDING CODES WITHIN THE JURISDICTION],~~ in which there is work involving *additions, alterations* or *changes of occupancy* shall be made to conform to the requirements of this chapter or the provisions of Chapters 5 through 13. The provisions of Sections 1401.2.1 through 1401.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R and S. These provisions shall not apply to buildings with occupancies in Group H or I.

## Code Change No: **EB13-15**

### Original Proposal

#### Section: 301.1.5 (New)

**Proponent:** David Collins, representing The American Institute of Architects (dcollins@preview-group.com); Ronald Nickson (rnickson@nmhc.org), representing National Multi-housing Council; Kevin Fry, BOMA International (Kfry@BOMA.org), representing BOMA International; Dan Buuck (dbuuck@nahb.org), representing NAHB

#### Add new text as follows:

**301.1.5 Compliance with accessibility** Accessible requirements for existing buildings shall comply with the 2009 edition of ICC A117.1.

**Reason:** Dramatic changes are being proposed in the next edition of the ICC A117.1 standard that will accommodate a higher number of individuals. For example, the turning radius is being changed from 60" diameter to a 67" diameter, and clear floor space from 30"x48" to 30"x52" and related access to features. While these changes are able to be incorporated into new construction relatively easily, existing buildings that have been designed to conform with earlier standards or were modified to meet those earlier standards are likely to find that full compliance will create problems. Even using provisions based on the technical infeasibility for compliance will still require compliance in some circumstances that aren't justifiable financially and physically.

The Department of Justice in development of the 2010 ADA Standard allows for "grandfathering" of elements in an existing building that have already been made to conform and are found to comply with the earlier ADA standard. The 2009 edition of A117.1 provides the most comprehensively structured provisions for compliance with the original ADA and HUD standard, which is why a specific reference to that edition of the Standard for determining whether areas outside the specific alterations or change of occupancy must be modified.

**Cost Impact:** Will not increase the cost of construction

This change will reduce the cost of construction where changes have already been made to features of a building to conform to older accessibility standards. Under the proposed changes to A117.1 significant cost would be required to conform to these requirements often in areas where upgrades have already been performed in areas such as toilet rooms to meet the barrier removal requirements of the ADA or because of alterations and change of occupancy under the I-Codes when that work had been done prior to the adoption of this new standard.

**Staff Note:** If this code change is successful, the edition referenced for ICC A117.1 in Chapter 16 will remain the 2009 edition.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal which specifies the 2009 edition of A117.1 was felt necessary to avoid difficulties in achieving compliance for existing buildings. The newer edition of A117.1 which is currently being developed is likely to have much more rigid requirements that will cause costly compliance issues. There was concern that the adoption of a specific edition should be revisited in future editions as these concerns may lessen. Also, it was suggested that a more precise application of A117.1 could be provided to avoid application of overly restrictive requirements to certain features without losing the reference to the most recent standard once it becomes available.

**Assembly Action:**

**None**

### Final Action Results

**EB13-15**

**AS**

## Code Change No: **EB14-15**

### Original Proposal

**Section: 401.2, 401.2.1, 401.2.2, 401.2.3, 403.1, 404.1, 602.1, 602.2**

**Proponent:** David Bonowitz, representing Existing Buildings Subcommittee, National Council of Structural Engineers Associations (dbonowitz@att.net)

**Delete without substitution:**

~~**401.2 Building materials and systems.** Building materials and systems shall comply with the requirements of this section.~~

~~**401.2.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 115.~~

~~**401.2.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

~~**401.2.3 Existing seismic force-resisting systems.** Where the existing seismic force-resisting system is a type that can be designated ordinary, values of  $R_o$  and  $C_d$  for the existing seismic force-resisting system shall be those specified by the *International Building Code* for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.~~

**Revise as follows:**

**403.1 General.** Except as provided by ~~Section 401.2~~ Sections 302.3, 302.4, or this section, *alterations* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. *Alterations* shall be such that the *existing building* or structure is no less conforming to the provisions of the *International Building Code* than the *existing building* or structure was prior to the *alteration*.

**Exceptions:**

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the *International Building Code* where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the *International Building Code* shall not be required to comply with the requirements of Section 1014.6 of the *International Building Code* regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

**404.1 General.** Buildings and structures, and parts thereof, shall be repaired in compliance with ~~Sections 401.2 and 404~~ this section. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. ~~Routine maintenance required by Section 401.2~~ Maintenance, ordinary

repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

**Delete without substitution:**

~~**602.1 Existing building materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the code official to render the building or structure unsafe or dangerous as defined in Chapter 2.~~

~~**602.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no dangerous or unsafe condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

**Reason:** The proposal removes provisions that were already moved to Chapter 3 in the last cycle. When they were moved, however, the remaining duplicate provisions addressed by this proposal could not be deleted because of Group assignments. Sections 401.2.1, 401.2.2, 602.1, and 602.2 are now in Sections 302.3 and 302.4. Section 401.2.3 is now in Sections 301.1.4.1 and 301.1.4.2.

If 401.2.1 - 401.2.3 are deleted as proposed, the balance of 401.2 can be deleted as well.

Section 403.1 is revised accordingly to cite the existing sections that cover new and existing materials.

In Section 404.1, the two references to Section 401.2 are removed and not replaced because they are actually erroneous references that should have been removed in a previous cycle. Their removal here is at most editorial, but could even be construed as errata. The reference to 401.2 used to match a provision in IBC Chapter 34 that referred to Section 3401.2 Maintenance, but that section no longer exists in the IEBC in any of its compliance methods. The first instance could be revised to refer instead to 302.4, but it is frankly not needed, as 302.4 applies even without a direct reference. The second instance is clearly a mistaken reference to the old maintenance provision, not a reference to the current provisions about new and existing materials.

**Cost Impact:** Will not increase the cost of construction  
The proposal is entirely editorial.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal cleans up repetitive language in Chapters 4 and 6 now found in Chapter 3. This was felt to be a cleaner approach in having such provisions in one more globally applicable section of the code.

**Assembly Action:**

**None**

**Final Action Results**

**EB14-15**

**AS**

**EB14-15**

**602.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no *dangerous* or *unsafe* condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

**Exception:** Repairs to a historic building shall be permitted using original or like materials. Materials shall comply with Sections 602.2, 602.3 and 602.4.

## Code Change No: **EB15-15**

### Original Proposal

**Section:** 401.2.1, 401.2.2, 602.1, 602.2

**Proponent:** Kathleen Petrie, representing City of Seattle, Department of Planning and Development (kathleen.petrie@seattle.gov)

**Delete without substitution:**

~~**401.2.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 115.~~

~~**401.2.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

~~**602.1 Existing building materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *code official* to render the building or structure unsafe or *dangerous* as defined in Chapter 2.~~

~~**602.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no *dangerous* or *unsafe* condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.~~

**Reason:** This proposal deletes the "Existing [Building] Materials" and "New and Replacement Materials" sections from Chapters 4 and 6 because they are already inserted in chapter 3. The content in Chapter 3 applies to all methods in the IEBC so deleting these sections in the other method chapters reduces redundancy.

**Cost Impact:** Will not increase the cost of construction  
This modification does not change the requirement. It removes unnecessary redundancy from other chapters, so costs are not increased or decreased

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal was approved as it was consistent with EB14-15 that removes repetitive language already located in the more general provisions found in Chapter 3.

**Assembly Action:**

**None**

### Final Action Results

**EB15-15**

**AS**



## Code Change No: **EB16-15**

### Original Proposal

#### Section: 401.2.4 (New)

**Proponent:** Maureen Traxler, Seattle Dept of Planning & Development, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov)

#### Add new text as follows:

**401.2.4 Fire resistance ratings** Where approved by the code official, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Building Code has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code. The building is required to meet the other applicable requirements of the International Building Code.

Plans, investigation and evaluation reports, and other data shall be submitted indicating which building elements and materials the applicant is requesting the code official to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means-of-egress conditions, fire code deficiencies, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted.

**Reason:** The proposed language is identical to Section 803.6. The language was added to the 2015 IEBC by EB 26-13. The reason offered for EB26-13 was:

"The topic of allowing the ability to apply sprinkler protection trade-offs that exist in the current code has been a matter of discussion in the code development arena for some time. How to apply the allowance for a potential reduction in fire-resistance ratings and in what code they belong have been discussed without a consensus.

"The concept is that once a building without sprinkler protection has been sprinklered throughout, whether due to renovations or retroactive code application, the designer should be permitted to allow the same fire resistance rating provisions for new construction in an existing sprinklered building. The issue is how to provide for that application of code and ensure a proper review by the building code official is performed to ensure there are no impediments to granting an approval that may result in the reduction of existing levels of protection.

"This proposal attempts to provide for that process by adding a new section to the IEBC under Section 806 Building Elements and Materials. The suggested language provides that once an existing building is sprinklered throughout and meets the other fire protection requirements of Chapter 9 of the IBC, plans, investigation and evaluation reports, and other data can be submitted seeking approval of the code official for the assignment of the new fire-resistance ratings which might me a reduction, or potentially an increase.

"The suggested language also requires that any special construction features, conditions of occupancy, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted. This is to ensure special conditions are identified that may prevent a reduction in fire-resistance ratings."

In the 2015 IEBC, the new section applies only to the work area method of compliance, but the reasoning applies equally well to the prescriptive method. The proposed language doesn't work well with the performance method because that method relies heavily on consideration of individual building features.

#### **Cost Impact:** Will not increase the cost of construction

This proposal could reduce the cost of construction because it allows alteration projects using the prescriptive method to use sprinkler systems as alternatives to other forms of protection as allowed in the Building Code and as allowed in the IEBC for the work area method.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal adds the same language found in Section 803.6 to the prescriptive method. The committee felt it was appropriate to provide this same flexibility within the prescriptive method to allow reduction in fire resistance rating when an automatic sprinkler system is installed. There was some concern that this was unnecessary as the IBC would already allow such a relaxation. However, it was felt that without this language it was difficult to accomplish such reductions.

**Assembly Action:**

**None**

**Final Action Results**

**EB16-15**

**AS**

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**EB15-15**

**602.2 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no *dangerous* or *unsafe* condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

**Exception:** Repairs to a historic building shall be permitted using original or like materials. Materials shall comply with Sections 602.2, 602.3 and 602.4.

## Code Change No: **EB19-15**

### Original Proposal

**Section:** 402.1, 403.1, 407.1, 601.2, 608.1, 805.2, [BS] 403.9, [BS] 807.6

**Proponent:** David Bonowitz, David Bonowitz, S.E., representing Existing Buildings Subcommittee, National Council of Structural Engineers Associations (dbonowitz@att.net)

**Revise as follows:**

**402.1 General.** *Additions* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. Alterations to the *existing building* or structure shall be made to ensure that the *existing building* or structure together with the *addition* are no less ~~conforming to~~ complying with the provisions of the *International Building Code* than the *existing building* or structure was prior to the *addition*. An *existing building* together with its *additions* shall comply with the height and area provisions of Chapter 5 of the *International Building Code*.

**403.1 General.** Except as provided by Section 401.2 or this section, *alterations* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. *Alterations* shall be such that the *existing building* or structure is no less ~~conforming to~~ complying with the provisions of the *International Building Code* than the *existing building* or structure was prior to the *alteration*.

**Exceptions:**

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the *International Building Code* where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the *International Building Code* shall not be required to comply with the requirements of Section 1014.6 of the *International Building Code* regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

**[BS] 403.9 Voluntary seismic improvements.** *Alterations* to existing structural elements or *additions* of new structural elements that are not otherwise required by this chapter and are initiated for the purpose of improving the performance of the seismic force-resisting system of an existing structure or the performance of seismic bracing or anchorage of existing nonstructural elements shall be permitted, provided that an engineering analysis is submitted demonstrating the following:

1. The altered structure and the altered nonstructural elements are no less ~~conforming to~~ complying with the provisions of the *International Building Code* with respect to earthquake design than they were prior to the *alteration*.
2. New structural elements are detailed as required for new construction.
3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required for new construction.
4. The *alterations* do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

**407.1 ~~Conformance~~ Compliance.** No change shall be made in the use or occupancy of any building unless such building is made to comply with the requirements of the *International Building Code* for the use or occupancy. Changes in use or occupancy in a building or portion thereof shall be such that the

existing building is no less complying with the provisions of this code than the existing building or structure was prior to the change. Subject to the approval of the building official, the use or occupancy of *existing buildings* shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without ~~conforming to~~ complying with all of the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

**Exception:** The building need not be made to comply with the seismic requirements for a new structure unless required by Section 407.4.

**601.2 ~~Conformance~~ Compliance.** The work shall not make the building less ~~conforming~~ complying than it was before the *repair* was undertaken.

**608.1 General.** Existing mechanical systems undergoing *repair* shall not make the building less ~~conforming~~ complying than it was before the *repair* was undertaken.

**805.2 General.** The means of egress shall comply with the requirements of this section.

**Exceptions:**

1. Where the *work area* and the means of egress serving it complies with NFPA 101.
2. Means of egress ~~conforming to~~ complying with the requirements of the building code under which the building was constructed shall be considered compliant means of egress if, in the opinion of the *code official*, they do not constitute a distinct hazard to life.

**[BS] 807.6 Voluntary lateral force-resisting system alterations.** *Alterations* of existing structural elements and additions of new structural elements that are initiated for the purpose of increasing the lateral force-resisting strength or stiffness of an existing structure and that are not required by other sections of this code shall not be required to be designed for forces ~~conforming to~~ complying with the *International Building Code*, provided that an engineering analysis is submitted to show that:

1. The capacity of existing structural elements required to resist forces is not reduced;
2. The lateral loading to existing structural elements is not increased either beyond its capacity or more than 10 percent;
3. New structural elements are detailed and connected to the existing structural elements as required by the *International Building Code*;
4. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the *International Building Code*; and
5. A *dangerous* condition as defined in this code is not created. Voluntary *alterations* to lateral force-resisting systems conducted in accordance with Appendix A and the referenced standards of this code shall be permitted.

**Reason:** This is an editorial proposal that adds clarity and consistency. The appropriate phrase is "no less complying," not "no less conforming." "Complying" is also the term with greater precedent and preference, as seen in sections 301.1, 406.2, 407.1, 410, 702, 705, 803, 805, 903, 1012, 1203, and 1204.

**Cost Impact:** Will not increase the cost of construction  
The proposal is entirely editorial.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was editorial in nature and the phrase "complying with" is preferred over "conforming to."

**Assembly Action:**

**None**

**Final Action Results**

**EB19-15**

**AS**

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## Code Change No: **EB21-15**

### Original Proposal

**Section(s):** 1105 (New), 1105.1 (New), 402.6 (New), 403.11 (New), 805 (New), 805.1 (New)

**Proponent:** Adolf Zubia, representing IAFC Fire & Life Safety Section

**Add new text as follows:**

**402.6 Carbon monoxide alarms in existing portions of a building.** Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 1103.9 of the *International Fire Code* or Section R315 of the *International Residential Code*, as applicable.

**403.11 Carbon monoxide alarms.** Carbon monoxide alarms shall be provided to protect sleeping units and dwelling units in Group I-1, I-2, I-4 and R occupancies in accordance with Section 1103.9 of the *International Fire Code*.

**804.4.4 Carbon monoxide alarms.** Sleeping units and dwelling units in any work area in Group I-1, I-2, I-4 and R occupancies shall be equipped with carbon monoxide alarms in accordance with Section 1103.9 of the *International Fire Code*.

### **SECTION 1105** **CARBON MONOXIDE ALARMS IN GROUPS I-1, I-2, I-4 AND R**

**1105.1 Carbon monoxide alarms in existing portions of a building** Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be equipped with carbon monoxide alarms in accordance with Section 1103.9 of the *International Fire Code* or Section R315 of the *International Residential Code*, as applicable.

**Reason:** This proposal is submitted by the Fire and Life Safety Section of the International Association of Fire Chiefs. IFC Section 1103.8 contains requirements for installing smoke alarms in existing occupancies. Those requirements are reflected in the IEBC Sections 402.5, 403.10, 804.4.3 and 1104.1. IFC Section 1103.9 contains requirements for installing carbon monoxide alarms in existing occupancies; however, those requirements are currently not reflected in the IEBC.

This proposal corrects this oversight with the new proposed code sections.

This proposal will provide consistency between the IFC, IRC and the IEBC with regard to the installation and requirements of carbon monoxide alarms.

**Cost Impact:** Will not increase the cost of construction

The cost of construction will not increase since the existing buildings should already be in compliance with the requirements in IFC Section 1103.9. This proposal simply provides correlation between the I-Codes.

### Report of Committee Action Hearings

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal was disapproved as it was not felt necessary to add these requirements to the IEBC already addressed by the IFC. In addition, there was concern that the cost impact was not addressed in enough detail and education is a better way to encourage the use of such detection.

**Assembly Action:**

**None**



## Public Comments

### Public Comment 1:

**Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Modified by this Public Comment.**

**402.6 Carbon monoxide alarms in existing portions of a building.** Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 1103.9 of the *International Fire Code* or Section R315 of the *International Residential Code*, as applicable.

**Exceptions:**

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of porches or decks, is exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances, are exempt from the requirements of this section.

**403.11 Carbon monoxide alarms.** Carbon monoxide alarms shall be provided to protect sleeping units and dwelling units in Group I-1, I-2, I-4 and R occupancies in accordance with Section 1103.9 of the *International Fire Code*.

**Exceptions:**

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of porches or decks, is exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances, are exempt from the requirements of this section.

### **SECTION 805** **CARBON MONOXIDE DETECTION**

**805.1 Carbon monoxide alarms.** Any work area in Group I-1, I-2, I-4 and R occupancies shall be equipped with carbon monoxide alarms in accordance with Section 1103.9 of the *International Fire Code*.

**Exceptions:**

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of porches or decks, is exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances, are exempt from the requirements of this section.

**Commenter's Reason:** The proposal was disapproved as it was not felt necessary to add these requirements to the IEBC already addressed by the IFC. Response: The CO alarm requirements replicate smoke alarm requirements that were judged to be necessary.

This Public Comment (PC) will provide consistency between the IFC, IRC and the IEBC with regard to the installation requirements of carbon monoxide detection in existing buildings. Section 1103.9 of the IFC and Section R315 of the IRC contain requirements for installation of CO detection in existing occupancies. However there are no such requirements in the IEBC.

The ICC membership has already determined that CO poisoning as a distinct hazard and has placed specific provisions in the IFC and IRC for CO detection in existing occupancies. Since the determination of a hazard is already identified in the aforementioned Codes similar requirements need to be added to the IEBC.

Also, in the absence of a model building code for the installation of CO detection in existing occupancies many jurisdictions are passing laws for CO detection in existing buildings with varying installation requirements.

## Final Action Results

**EB21-15**

**AMPC1**

**EB21-15****FBC, Building**

*Section 908.8 – Carbon Monoxide Protection. Add new Section 908.7 to read as follows:*

**Carbon monoxide protection.** Every separate building or an addition to an existing building for which a permit for new construction is issued and having a fossil-fuel-burning heater or appliance, a fireplace, an attached garage, or other feature, fixture, or element that emits carbon monoxide as a byproduct of combustion shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes in the new building or addition, or at such other locations as required by this Code.

**908.8.1 Carbon monoxide alarm.** The requirements of Section 908.7 shall be satisfied by providing for one of the following alarm installations:

1. A hard-wired carbon monoxide alarm.
2. A battery-powered carbon monoxide alarm.
3. A hard-wired combination carbon monoxide and smoke alarm.
4. A battery-powered combination carbon monoxide and smoke alarm.

**908.8.2 Combination alarms.** Combination smoke/carbon monoxide alarms shall be listed and labeled by a Nationally Recognized Testing Laboratory.

**Exceptions:**

1. An approved operational carbon monoxide detector shall be installed inside or directly outside of each room or area within a hospital, inpatient hospice facility or nursing home facility licensed by the Agency for Health Care Administration, or a new state correctional institution where a fossil-fuel burning heater, engine, or appliance is located. The carbon monoxide detector shall be connected to the fire-alarm system of the hospital, inpatient hospice facility, or nursing home facility as a supervisory signal.
2. This section shall not apply to existing buildings that are undergoing alterations or repair unless the alteration is an addition as defined in Section 908.7.3.

**908.7.3** Addition shall mean an extension or increase in floor area, number of stories or height of a building or structure.

## Code Change No: **EB22-15**

### Original Proposal

**Section: 1401.2.6 (New), 403.1, 801.3**

**Proponent:** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

**Revise as follows:**

**403.1 General.** Except as provided by Section 401.2 or this section, *alterations* to any building or structure shall comply with the requirements of the *International Building Code* for new construction. *Alterations* shall be such that the *existing building* or structure is no less conforming to the provisions of the *International Building Code* than the *existing building* or structure was prior to the *alteration*.

**Exceptions:**

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the *International Building Code* where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the *International Building Code* shall not be required to comply with the requirements of Section 1014.6 of the *International Building Code* regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.
3. Where provided in below grade transportation stations, existing and new escalators shall be permitted to have a clear width of less than 32 inches (815 mm).

**801.3 Compliance.** All new construction elements, components, systems, and spaces shall comply with the requirements of the *International Building Code*.

**Exceptions:**

1. Windows may be added without requiring compliance with the light and ventilation requirements of the *International Building Code*.
2. Newly installed electrical equipment shall comply with the requirements of Section 808.
3. The length of dead-end corridors in newly constructed spaces shall only be required to comply with the provisions of Section 805.6.
4. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be 7 feet (2134 mm).
5. Where provided in below grade transportation stations, existing and new escalators shall be permitted to have a clear width of less than 32 inches (815 mm).

**Add new text as follows:**

**1401.2.6 Escalators** Where escalators are provided in below grade transportation stations, existing and new escalators shall be permitted to have a clear width of less than 32 inches (815 mm).

**Reason:** Section 3004.2.2 of the IBC includes an exception for escalators serving below-grade transportation systems allowing their minimum width to be less than 32". Since the criteria for existing buildings is in the IEBC this change is to bring that exception into the appropriate code.

**Cost Impact:** Will not increase the cost of construction  
This is simply putting the provisions found in the IBC into the IEBC for work involving an alteration and will not increase the cost of construction.

**Report of Committee Action  
Hearings**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** This proposal simply makes the escalator width requirements consistent with the IBC for existing buildings. This was felt to be appropriate and an improvement to the IEBC.

**Assembly Action:** **None**

**Final Action Results**

**EB22-15**

**AS**

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## Code Change No: **EB26-15**

### Original Proposal

#### Section: 404.1, 502.1

**Proponent:** David Bonowitz, David Bonowitz, S.E., representing Existing Buildings Subcommittee, National Council of Structural Engineers Associations (dbonowitz@att.net)

#### Revise as follows:

**404.1 General.** Buildings and structures, and parts thereof, shall be repaired in compliance with ~~Sections 401.2 and 404~~ this section. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. ~~Routine maintenance required by Section 401.2~~ Maintenance, ~~ordinary repairs work~~ exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

**502.1 Scope.** *Repairs*, as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, *equipment or fixtures* for the purpose of ~~maintaining such components in good or sound~~ restoring the predamage condition with respect to existing loads or performance requirements.

**Reason:** This proposal clarifies a distinction between the scopes of the IEBC and the IPMC. The distinction between maintenance and repair is already implied by the two codes, but some of the codes' wording has led to confusion. In particular, use of the words "maintenance" or "maintain" in various provisions for repairs has led some users and code officials to think that repair provisions either apply to maintenance work or may be used in lieu of maintenance provisions (in the IPMC or elsewhere).

The key conceptual distinction, as the current IEBC infers, is that "maintenance" preserves an acceptable condition, while "repair" corrects an unacceptable condition. Thus, maintenance applies even to an element in good condition and working order, while repair applies only after some damage has occurred.

The evidence is clear that the IEBC and IPMC intend to distinguish maintenance from repair: Maintenance is not defined in the IEBC. The IEBC makes an explicit distinction between the two types of work in Sections 404.1, 1301.2, and 1501.6.6. Sections 410.1, 410.2, and 1505.2 use the term "maintenance" to refer to preservation of an acceptable condition, not remedy of an unacceptable one. Section 105 makes the same distinction indirectly by acknowledging that some repairs, even though they correct damage, are as "ordinary" and commonplace as maintenance and thus also do not require a permit.

IPMC Section 101.3 distinguishes maintenance from repair, and Section 102.3 says repair is to be done in accordance with the IEBC. IEBC Section 101.7 acknowledges the same thing, namely that the IPMC may mandate repairs to correct violations and may refer to the IEBC as the basis for compliance.

The evidence is also clear that the IEBC intends its repair provisions to correct damage: Chapters 4 and 6 refer repeatedly to the "predamage" condition. Section 502.1, though it uses the verb "maintain" in its plain English sense, is explicit that repair means "restoration or replacement of damaged materials, elements, equipment or fixtures." Section 502.3 addresses the "repair of damaged components" and specifically distinguishes them from the undamaged components that do not need repair but might be affected by a repair procedure. Section 1302.7 speaks of repair specifically in the context of damage to a relocated building.

To clarify these distinctions, this proposal makes the following revisions:

In Section 404.1, it makes three edits:

- It deletes the unnecessary word "routine." There are not multiple types of maintenance, routine and non-routine.
- It replaces "ordinary repairs" with a more proper and generic term. The important point is to refer to Section 105.2 for work that does not require permits.
- It removes the incorrect reference to Section 401.2 in two places. The first instance could refer instead to Section 302.4 but is not needed. The second instance is clearly a mistake, as Section 401.2 is not about maintenance at all. This used to be a matching reference to IBC Section 3401.2, which addressed maintenance, but that provision no longer exists anywhere in the IEBC.

In Section 502.1, it makes two edits:

- It replaces the word "maintaining" with "restoring," to avoid confusion between maintenance and repair.
- It replaces the phrase "good or sound" (removed elsewhere in past cycles) with "predamage," as used elsewhere in Chapters 4 and 6.

If approved, coordinating proposals will be made in Group B as follows:

- Revise the definition of Repair to remove the confusing word "maintenance" and to clarify that repair addresses damage.
- Revise the definition of Roof Repair similarly.
- Revise Section 105.2 as needed for consistency

**Cost Impact:** Will not increase the cost of construction

The proposal is editorial, for purposes of clarifying an existing distinction in scope between the IEBC and IPMC.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal appropriately distinguishes everyday maintenance of buildings versus the repair of damage to a building. This better coordinates and differentiates the content of the IEBC with the IPMC.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB26-15**

**AS**

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<b>Code Change No: EB28-15</b>
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<b>Original Proposal</b>
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**Section: 405.5**

**Proponent:** Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

**Revise as follows:**

**405.5 Opening protectives.** Doors and windows ~~along the~~ within 10 feet of fire escape stairways shall be protected with <sup>3</sup>/<sub>4</sub> -hour opening protectives.

**Exception:** Opening protection shall not be required in buildings equipped throughout with an automatic sprinkler system.

**Reason:** Section 805.3.1.2.1 permits this exception for Level 2 Alterations. This proposal would provide the same exception for fire doors and windows along the fire escape when using the prescriptive compliance method.

**Cost Impact:** Will not increase the cost of construction  
When fire sprinkler systems are installed there would be no need to install new opening protectives.

<b>Report of Committee Action Hearings</b>
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**Committee Action:****Approved as Submitted**

**Committee Reason:** This proposal was approved for consistency with the current provisions in Section 805.3.1.2.1 Item 4.

**Assembly Action:****None**

<b>Final Action Results</b>
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**EB28-15****AS**

## Code Change No: **EB29-15**

### Original Proposal

**Section: 406.2, 406.3, 702.4, 702.5**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**406.2 Replacement window opening control devices.** In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable;
2. The window replacement includes replacement of the sash and the frame;
3. ~~The One of the following applies:~~
  - 3.1 ~~In Group R-2 or R-3 building containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor; or~~
  - 3.2 ~~In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;~~
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position; and
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1029.2 of the *International Building Code*.

**Exceptions:**

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F 2090.

**406.3 Replacement window emergency escape and rescue openings.** Where windows are required to provide *emergency escape* and *rescue openings* in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the *International Building Code* and Sections R310.2.1 and R310.2.3 of the *International Residential Code* accordingly provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.



2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

**702.4 Window opening control devices on replacement windows.** In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable;
2. The window replacement includes replacement of the sash and the frame;
3. One of the following applies:
  - 3.1 In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor; or
  - 3.2 In one- and two-family dwellings and town-houses regulated by the *International Residential Code*, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position; and
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1029.2 of the *International Building Code*.

**Exceptions:**

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F 2090.

**702.5 ~~Emergency Replacement window emergency escape and rescue openings.~~** Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the *International Building Code* and Sections R310.21 and R310.2.3 of the *International Residential Code* accordingly, provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide *emergency escape* and *rescue openings*.

**Reason:** This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This

includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>. The intent of this proposal is for consistent terminology in the IEBC between Chapter 4 and 7 when dealing with replacement windows. The added language also clarifies that this applies to windows in IRC dwellings.

**Cost Impact:** Will not increase the cost of construction

This proposal will not increase the cost of construction because it is simply coordinating current options in the IEBC.

**Staff note:** An errata was addressed in Section 406.3 where reference to Sections 1030.2, 1030.3 and 1030.5 should have referenced "of the International Building Code." Therefore the phrase did not need to be underlined.

## Report of Committee Action Hearings

### Committee Action:

### Approved as Modified

#### Modify as follows:

**406.2 Replacement window opening control devices.** In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable;
2. The window replacement includes replacement of the sash and the frame;
3. One of the following applies
  - 3.1 In Group R-2 or R-3 building containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor; or
  - 3.2 In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top of the sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position; and
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1029.2 of the *International Building Code*.

#### Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F 2090.

**406.3 Replacement window emergency escape and rescue openings.** Where windows are required to provide *emergency escape and rescue openings* in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the *International Building Code* and Sections R310.2.1, R310.2.2 and R310.2.3 of the *International Residential Code* accordingly provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

**702.4 Window opening control devices on replacement windows.** In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable;
2. The window replacement includes replacement of the sash and the frame;
3. One of the following applies:
  - 3.1 In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor; or
  - 3.2 In one- and two-family dwellings and town-houses regulated by the *International Residential Code*, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor;
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position; and
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 4029.2 1030.2 of the *International Building Code*.

**Exceptions:**

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F 2090.

**702.5 Replacement window emergency escape and rescue openings.** Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the *International Residential Code*, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.5 of the *International Building Code* and Sections ~~R310.2~~ R310.2.1, R310.2.2 and R310.2.3 of the *International Residential Code* accordingly, provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F 2090 shall be permitted for use on windows required to provide *emergency escape and rescue openings*.

**Committee Reason:** This proposal was approved as it correlates the window replacement requirements in the prescriptive method with the performance method. The prescriptive method had not initially referenced one and two family dwellings as regulated by the IRC. There were several modifications that simply addressed editorial revisions. In section 406.2 item 2 the missing words "of the" were added to complete the phrase "the top of the sill." . The reference to Section R310.2.2 was added to Section 406.3 to more comprehensively reference the appropriate requirements of the IRC. Finally, the reference to Section 1029.2 was revised to Section 1030.2 in Section 702.4. This revision to Section 1030.2 will also be addressed as errata in the 2015 IEBC.

**Assembly Action:**

**None**

**Final Action Results**

**EB29-15**

**AM**

**Code Change No: EB30-15**

**Original Proposal**

**Section: 407.1, 410.4**

**Proponent:** Maureen Traxler, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov)

**Revise as follows:**

**407.1 Conformance.** No change of occupancy shall be made in the use or occupancy of any building unless such the building is made to comply with the requirements of the *International Building Code* for the use or occupancy. Changes in use or of occupancy in a building or portion thereof shall be such that the existing building is no less complying with the provisions of this code than the existing building or structure was prior to the change. Subject to the approval of the building official, the use or changes of occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code for ~~these groups~~ the new occupancy, provided the new or proposed use occupancy is less hazardous, based on life and fire risk, than the existing ~~use~~ occupancy.

**Exception:** The building need not be made to comply with the seismic requirements for a new structure unless required by Section 407.4.

**410.4 Change of occupancy.** Existing buildings that undergo a change of ~~group~~ or occupancy shall comply with this section.

**Exception:** Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

**Reason:** These changes are proposed for consistency with EB52-12 from the last code cycle. EB52 modified the definition of "change of occupancy" and made other changes consistent with the revised definition. EB52, however, only modified Chapter 10 for the work area method of compliance. This proposal makes changes that make the prescriptive compliance method consistent with EB52 and the work area method.

EB52-12 modified the definition of "change of occupancy" to make clear distinctions between changing occupancy classifications (e.g., B to R), changing occupancy group (e.g., R-1 to R-2), and changing use within a group (e.g., R-2 dormitory to R-2 boarding house). However, any of those changes are still under the umbrella "change of occupancy" definition, which is why this proposal changes the terms "group" and "use" to "occupancy."

**Cost Impact:** Will not increase the cost of construction  
This proposal makes editorial changes for consistency within the code.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was appropriate as it simply coordinates the change of occupancy requirements in Section 407.4 with the changes made to the definition of change of occupancy and the provisions in Chapter 10 in the 2015 IEBC.

**Assembly Action:**

**None**

**Final Action Results**

**EB30-15**

**AS**

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**EB30-15**

**410.4 Change of occupancy.** ~~Reserved. Existing buildings~~ that undergo a change of group or occupancy shall comply with this section.

**Exception:** ~~Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.~~

## Code Change No: **EB33-15**

### Original Proposal

**Section: 410, 705, 801.1, 806, 901.2, 906, 1006, 1012.1.4, 1012.8, 1105, 1204, 1401.2.5, B101.3, B101.4, B102.2.3**

**Proponent:** David Collins, representing The American Institute of Architects (dcollins@preview-group.com); Maureen Traxler, City of Seattle (maureen.traxler@seattle.gov) representing City of Seattle Dept of Planning and Development; Steven Winkel (swinkel@preview-group.com) representing the Preview Group

**Revise as follows:**

**~~410.1303.1~~ 303.1 Scope.** The provisions of Sections ~~410.4-303.1~~ through ~~410.9-303.9~~ apply to maintenance, *change of occupancy*, *additions* and *alterations* to *existing buildings*, including those identified as *historic buildings*.

**~~410.2-303.2~~ 303.2 Maintenance of facilities.** *No change to text.*

**~~410.3-303.3~~ 303.3 Extent of application.** *No change to text.*

**~~410.4-303.4~~ 303.4 Change of occupancy.** *No change to text.*

**~~410.4.1-303.4.1~~ 303.4.1 Partial change in occupancy.** Where a portion of the building is changed to a new occupancy classification, any *alterations* shall comply with Sections ~~410.6-303.6~~, ~~410.7-303.7~~ and ~~410.8-303.8~~.

**~~410.4.2-303.4.2~~ 303.4.2 Complete change of occupancy.** Where an entire building undergoes a *change of occupancy*, it shall comply with Section ~~410.4.4-303.4.1~~ and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to *primary function* areas.
3. Signage complying with Section 1111 of the *International Building Code*.
4. Accessible parking, where parking is being provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is *technically infeasible* to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

**Exception:** The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

**~~410.5-303.5~~ 303.5 Additions.** Provisions for new construction shall apply to *additions*. An *addition* that affects the accessibility to, or contains an area of, a *primary function* shall comply with the requirements in Section ~~410.7-303.7~~.

**440.6-303.6 Alterations.** A facility that is altered shall comply with the applicable provisions in Chapter 11 of the *International Building Code*, unless *technically infeasible*. Where compliance with this section is *technically infeasible*, the *alteration* shall provide access to the maximum extent technically feasible.

**Exceptions:**

1. The altered element or space is not required to be on an accessible route, unless required by Section 440.7-303.7.
2. Accessible means of egress required by Chapter 10 of the *International Building Code* are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in *existing buildings* and facilities undergoing a *change of occupancy* in conjunction with *alterations* where the *work area* is 50 percent or less of the aggregate area of the building.

**440.7-303.7 Alterations affecting an area containing a primary function.** *No change to text.*

**440.8-303.8 Scoping for alterations.** The provisions of Sections 440.8.1-303.8.1 through 440.8.14-303.8.15 shall apply to *alterations* to *existing buildings* and *facilities*.

**440.8.1-303.8.1 Entrances.** *No change to text.*

**440.8.2-303.8.2 Elevators.** *No change to text.*

**440.8.3-303.8.3 Platform lifts.** *No change to text.*

**440.8.4-303.8.4 Stairways and escalators in existing buildings.** *No change to text.*

**440.8.5-303.8.5 Ramps.** Where slopes steeper than allowed by Section 1012.2 of the *International Building Code* are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 440.8.5-303.8.5.

**TABLE 303.8.5  
RAMPS**

SLOPE	MAXIMUM RISE
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

For SI: 1 inch = 25.4 mm.

**440.8.6-303.8.6 Accessible dwelling or sleeping units.** *No change to text.*

**440.8.7-303.8.7 Type A dwelling or sleeping units.** *No change to text.*

**440.8.8-303.8.8 Type B dwelling or sleeping units.** *No change to text.*

**303.8.9 Dining areas** An accessible route to raised or sunken dining areas or to outdoor seating areas is not required provided that the same services and decor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.

**440.8.9-303.8.10 Jury boxes and witness stands.** *No change to text.*

**440.8.10-303.8.11 Toilet rooms.** *No change to text.*

**440.8.11-303.8.12 Dressing, fitting and locker rooms.** *No change to text.*



~~410.8.12~~ 303.8.13 **Fuel dispensers.** *No change to text.*

~~410.8.13~~ 303.8.14 **Thresholds.** *No change to text.*

~~410.8.14~~ 303.8.15 **Amusement rides.** *No change to text.*

~~410.9~~ 303.9 **Historic buildings.** These provisions shall apply to *facilities* designated as historic structures that undergo *alterations* or a *change of occupancy*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the *facility*, as determined by the applicable governing authority, the alternative requirements of Sections ~~410.9.1~~ 303.9.1 through ~~410.9.4~~ 303.9.4 for that element shall be permitted.

**Exception:** Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in historical buildings.

~~410.9.1~~ 303.9.1 **Site arrival points.** *No change to text.*

~~410.9.2~~ 303.9.2 **Multilevel buildings and facilities.** *No change to text.*

~~410.9.3~~ 303.9.3 **Entrances.** *No change to text.*

~~410.9.4~~ 303.9.4 **Toilet and bathing facilities.** *No change to text.*

**801.1 Scope.** Level 2 *alterations* as described in Section 504 shall comply with the requirements of this chapter.

**Exception:** Buildings in which the reconfiguration is exclusively the result of compliance with the accessibility requirements of Section ~~705.2~~ 303.7 shall be permitted to comply with Chapter 7.

**901.2 Compliance.** In addition to the provisions of this chapter, work shall comply with all of the requirements of Chapters 7 and 8. The requirements of Sections 803, 804 and 805 shall apply within all *work areas* whether or not they include exits and corridors shared by more than one tenant and regardless of the occupant load.

**Exception:** Buildings in which the reconfiguration of space affecting exits or shared egress access is exclusively the result of compliance with the accessibility requirements of Section ~~705.2~~ 303.7 shall not be required to comply with this chapter.

**[BS]-B101.3 Qualified historic buildings and facilities subject to Section 106 of the National Historic Preservation Act.** Where an *alteration* or *change of occupancy* is undertaken to a qualified *historic building* or facility that is subject to Section 106 of the National Historic Preservation Act, the federal agency with jurisdiction over the undertaking shall follow the Section 106 process. Where the state historic preservation officer or Advisory Council on Historic Preservation determines that compliance with the requirements for accessible routes, ramps, entrances, or toilet facilities would threaten or destroy the historic significance of the building or facility, the alternative requirements of Section ~~410.9~~ 303.9 for that element are permitted.

**[BS]-B101.4 Qualified historic buildings and facilities not subject to Section 106 of the National Historic Preservation Act.** Where an *alteration* or *change of occupancy* is undertaken to a qualified *historic building* or facility that is not subject to Section 106 of the National Historic Preservation Act, and the entity undertaking the alterations believes that compliance with the requirements for accessible routes, ramps, entrances, or toilet facilities would threaten or destroy the historic significance of the building or facility, the entity shall consult with the state historic preservation officer. Where the state historic preservation officer determines that compliance with the accessibility requirements for accessible routes, ramps, entrances, or toilet facilities would threaten or destroy the historical significance

of the building or facility, the alternative requirements of Section ~~410.9~~303.9 for that element are permitted.

**[BS]-B102.2.3 Direct connections.** New direct connections to commercial, retail, or residential facilities shall, to the maximum extent feasible, have an accessible route complying with Section ~~705.2~~303.7 from the point of connection to boarding platforms and transportation system elements used by the public. Any elements provided to facilitate future direct connections shall be on an accessible route connecting boarding platforms and transportation system elements used by the public.

**Delete without substitution:**

**~~SECTION 705-  
ACCESSIBILITY~~**

**~~705.1 General.~~** A *facility* that is altered shall comply with the applicable provisions in Sections ~~705.1.1 through 705.1.14,~~ and Chapter 11 of the *International Building Code* unless it is *technically infeasible*. Where compliance with this section is *technically infeasible*, the alteration shall provide access to the maximum extent that is technically feasible.

A *facility* that is constructed or altered to be accessible shall be maintained accessible during occupancy.

**Exceptions:**

- ~~1. The altered element or space is not required to be on an accessible route unless required by Section 705.2.~~
- ~~2. Accessible means of egress required by Chapter 10 of the *International Building Code* are not required to be provided in existing *facilities*.~~
- ~~3. Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in existing *facilities* undergoing less than a Level 3 alteration.~~
- ~~4. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall meet the provisions for Type B dwelling units.~~

**~~705.1.1 Entrances.~~** Where an *alteration* includes alterations to an entrance, and the *facility* has an accessible entrance on an accessible route, the altered entrance is not required to be accessible unless required by Section 705.2. Signs complying with Section 1111 of the *International Building Code* shall be provided.

**~~705.1.2 Elevators.~~** Altered elements of existing elevators shall comply with ASME A17.1/CSA B44 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

**~~705.1.3 Platform lifts.~~** Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

**~~705.1.4 Ramps.~~** Where steeper slopes than allowed by Section 1012.2 of the *International Building Code* are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 705.1.4.

**RAMPS**

SLOPE	MAXIMUM RISE
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

For SI: 1 inch = 25.4 mm.

**705.1.5 Dining areas.** An accessible route to raised or sunken dining areas or to outdoor seating areas is not required provided that the same services and decor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.

**705.1.6 Jury boxes and witness stands.** In *alterations*, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where ramp or lift access poses a hazard by restricting or projecting into a required means of egress.

**705.1.7 Accessible dwelling or sleeping units.** Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered, the requirements of Section 1107 of the *International Building Code* for Accessible units apply only to the quantity of the spaces being altered.

**705.1.8 Type A dwelling or sleeping units.** Where more than 20 Group R-2 dwelling or sleeping units are being altered, the requirements of Section 1107 of the *International Building Code* for Type A units and Chapter 9 of the *International Building Code* for visible alarms apply only to the quantity of the spaces being altered.

**705.1.9 Toilet rooms.** Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the *International Building Code* is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

**705.1.10 Dressing, fitting and locker rooms.** Where it is *technically infeasible* to provide accessible dressing, fitting, or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate sex facilities are provided, accessible rooms for each sex shall be provided. Separate sex facilities are not required where only unisex rooms are provided.

**705.1.11 Fuel dispensers.** Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

**705.1.12 Thresholds.** The maximum height of thresholds at doorways shall be  $3/4$  inch (19.1 mm). Such thresholds shall have beveled edges on each side.

**705.1.13 Extent of application.** An *alteration* of an existing element, space, or area of a *facility* shall not impose a requirement for greater accessibility than that which would be required for new construction. *Alterations* shall not reduce or have the effect of reducing accessibility of a *facility* or portion of a *facility*.

**705.1.14 Amusement rides.** Where the structural or operational characteristics of an amusement ride are altered to the extent that the amusement ride's performance differs from that specified by the manufacturer or the original design, the amusement ride shall comply with requirements for new construction in accordance with Section 1110.4.8 of the *International Building Code*.

**705.2 Alterations affecting an area containing a primary function.** Where an *alteration* affects the accessibility to a, or contains an area of, *primary function*, the route to the primary function area shall be accessible. The accessible route to the *primary function* area shall include toilet facilities and drinking fountains serving the area of *primary function*.

### **Exceptions:**

1. ~~The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of *primary function*.~~
2. ~~This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets and signs.~~
3. ~~This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or *alteration* of fire protection systems and abatement of hazardous materials.~~
4. ~~This provision does not apply to *alterations* undertaken for the primary purpose of increasing the accessibility of a *facility*.~~
5. ~~This provision does not apply to altered areas limited to Type B dwelling and sleeping units.~~

## **SECTION 806- ACCESSIBILITY**

**806.1 General.** A building, *facility*, or element that is altered shall comply with this section and Section 705.

**806.2 Stairways and escalators in existing buildings.** In *alterations* where an escalator or stairway is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5 of the *International Building Code*.

## **SECTION 906- ACCESSIBILITY**

**906.1 General.** A building, *facility* or element that is altered shall comply with this section and Sections 705 and 806.

**906.2 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered, the requirements of Section 1107 of the *International Building Code* for Type B units and Chapter 9 of the *International Building Code* for visible alarms apply only to the quantity of the spaces being altered.

**Exception:** Group I-1, I-2, R-2, R-3 and R-4 dwelling or sleeping units where the first certificate of occupancy was issued before March 15, 1991 are not required to provide Type B dwelling or sleeping units.

## **SECTION 1006- ACCESSIBILITY**

**1006.1 General.** Accessibility in portions of buildings undergoing a *change of occupancy* classification shall comply with Section 1012.8.

**1012.1.4 Accessibility.** All buildings undergoing a change of occupancy classification shall comply with Section 1012.8.

**1012.8 Accessibility.** *Existing buildings* that undergo a change of group or occupancy classification shall comply with this section.

**Exception:** Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in existing buildings and facilities undergoing a *change of occupancy* in conjunction with less than a Level 3 *alteration*.

**1012.8.1 Partial change in occupancy.** Where a portion of the building is changed to a new occupancy classification, any *alteration* shall comply with Sections 705, 806 and 906, as applicable.

**1012.8.2 Complete change of occupancy.** Where an entire building undergoes a *change of occupancy*, it shall comply with Section 1012.8.1 and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to *primary function* areas.
3. Signage complying with Section 1111 of the *International Building Code*.
4. Accessible parking, where parking is provided.
5. At least one accessible passenger loading zone, where loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is *technically infeasible* to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

**Exception:** The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

## **SECTION 1105- ACCESSIBILITY**

**1105.1 Minimum requirements.** Accessibility provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, *primary function* shall comply with the requirements of Sections 705, 806 and 906, as applicable.

**1105.2 Accessible dwelling units and sleeping units.** Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the *International Building Code* for accessible units apply only to the quantity of spaces being added.

**1105.3 Type A dwelling or sleeping units.** Where more than 20 Group R-2 dwelling or sleeping units are being added, the requirements of Section 1107 of the *International Building Code* for Type A units and Chapter 9 of the *International Building Code* for visible alarms apply only to the quantity of the spaces being added.

**1105.4 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the *International Building Code* for Type B units and Chapter 9 of the *International Building Code* for visible alarms apply only to the quantity of spaces being added.

## **CHAPTER 12- HISTORIC BUILDINGS**

### **SECTION 1204- ALTERATIONS**

**1204.1 Accessibility requirements.** The provisions of Sections 705, 806 and 906, as applicable, shall apply to facilities designated as historic structures that undergo *alterations*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the building or *facility*, as determined by the *code official*, the alternative requirements of Sections 1204.1.1 through 1204.1.4 for that element shall be permitted.

**Exception:** Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in historical buildings.

**1204.1.1 Site arrival points.** At least one accessible route from a site arrival point to an *accessible* entrance shall be provided.

~~**1204.1.2 Multilevel buildings and facilities.** An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.~~

~~**1204.1.3 Entrances.** At least one main entrance shall be accessible.~~

**Exceptions:**

- ~~1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or~~
- ~~2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.~~

~~**1204.1.4 Toilet and bathing facilities.** Where toilet rooms are provided, at least one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the *International Building Code* shall be provided.~~

~~**1205.15 Accessibility requirements.** The provisions of Section 1012.8 shall apply to facilities designated as historic structures that undergo a *change of occupancy*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, ramps, entrances, or toilet rooms would threaten or destroy the historic significance of the building or *facility*, as determined by the authority having jurisdiction, the alternative requirements of Sections 1204.1.1 through 1204.1.4 for these elements shall be permitted~~

~~**Exception:** Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in historical buildings.~~

~~**1401.2.5 Accessibility requirements.** Accessibility shall be provided in accordance with Section 410 or 605.~~

## SECTION 410 ACCESSIBILITY FOR EXISTING BUILDINGS

**Reason:** This change is written to move all of the accessibility requirements into a single section in new IEBC Section 303. New 303 is editorial with no change in criteria or requirements and simply renumbers Section 410 to Section 303. All accessibility requirements for existing buildings are placed in one section (303) allowing a focused and clear set of requirements for users to understand. In the existing IEBC, two of the three compliance methods (prescriptive and work area methods) have provisions for accessibility that are virtually identical. In addition, the existing performance method refers to the accessibility provisions of the other compliance methods.

The intent of this change is a reorganization of accessibility provisions to avoid duplication of the same requirements in multiple code sections. The text of requirements is relocated, but the content of the moved sections is not changed. There is no intent to change code requirements, only to recognize them. Note that Section 303.8.9 addressing dining areas is included only because that section has not yet been deleted from Chapter 7 as it was in current Section 410.

The identical provisions in all subsequent sections have been deleted.

We understand that there are several proposals from BCAC to coordinate the provisions between Chapter 4 and 7. Our intent is that those proposals would be incorporated into the change. This move is editorial only.

**Cost Impact:** Will not increase the cost of construction

This change simply consolidate the various criteria in the IEBC, and should not change the cost of construction.

**Staff Note:** The deletion to the committee scoping of [BS] to Sections B101.3, B101.4 and B102.2.3 is an errata and is not part of the proposal.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** Though this proposal was viewed as a shift from the format of the IEBC it was felt for consistency purposes that the accessibility provisions should be located in one location within Chapter 3. The provisions are meant to apply equally to all methods.

**Assembly Action:**

**Disapproved**

**Final Action Results**

**EB33-15**

**AS**

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## Code Change No: **EB39-15**

### Original Proposal

#### Section: 410.6

**Proponent:** Dominic Marinelli, United Spinal Association (DMarinelli@accessibility-services.com); Lee Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development Committee

#### Revise as follows:

**410.6 Alterations.** A facility that is altered shall comply with the applicable provisions in Chapter 11 of the *International Building Code*, unless *technically infeasible*. Where compliance with this section is *technically infeasible*, the *alteration* shall provide access to the maximum extent technically feasible.

#### Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 410.7.
2. Accessible means of egress required by Chapter 10 of the *International Building Code* are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in *existing buildings* and facilities undergoing ~~a change of occupancy in conjunction with alterations~~ where the *work area* is 50 percent or less of the aggregate area of the building.

#### Reason:

**Dominic Marinelli:** The purpose of this code change proposal is to eliminate a conflict in the IEBC between the requirements in the Prescriptive and Work Area methods.

United Spinal Association and its partners supports requiring Type B units in existing buildings when that building is undergoing a major alteration (i.e., greater than 50% or Level 3). We do not believe that this requirement should depend on this also being a change in occupancy. We were successful in getting this requirement into the International Existing Building Code three (3) cycles ago. Previous editions exempted Type B units in any existing building.

We believe that there is a technical conflict in Section 410.6, Exception 4. The exception literally says that a minor alteration with a change of occupancy does not have to provide Type B units. The exception does not allow for minor alterations with no change in occupancy to be exempted from Type B units. That would be in conflict with the requirements in 410.8.8, 705.1 and 906.2. These three indicate Type B units are required only in major alterations.

United spinal also has a proposal in for Section 906.2 that is a different discussion.

**410.8.8 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being added.

Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being altered.

**705.1 General.** A facility that is altered shall comply with the applicable provisions in Sections 705.1.1 through 705.1.14, and Chapter 11 of the International Building Code unless it is technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent that is technically feasible.

A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy.



**Exceptions:**

1. The altered element or space is not required to be on an accessible route unless required by Section 705.2.
2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.
3. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing facilities undergoing less than a Level 3 alteration.
4. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall meet the provisions for Type B dwelling units.

**906.2 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered, the requirements of Section 1107 of the International Building Code for Type B units and Chapter 9 of the International Building Code for visible alarms apply only to the quantity of the spaces being altered.

**Exception:** Group I-1, I-2, R-2, R-3 and R-4 dwelling or sleeping units where the first certificate of occupancy was issued before March 15, 1991 are not required to provide Type B dwelling or sleeping units.

**Lee Kranz:** The text in exception #4 of Section 410.6 is intended to address alternations to existing buildings but currently includes change of occupancy language. The exception in Section 410.4 deals with change of occupancy issues so the language in exception #4 of Section 410.6 is redundant and is not misplaced under the Alterations section. This proposal corrects exception #4 of Section 410.6 relating to alterations by deleting the change of occupancy text which is already covered in the exception to Section 410.4. Also, the revision creates consistency with exception #3 of Section 705.1.

**Cost Impact:** Will not increase the cost of construction  
This is a correction to clarify the code and will not impact the cost of construction.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal removes a phrase that is misplaced. Simply focusing on smaller alterations is appropriate to allow the omission of Type B dwelling or sleeping units. This omission should not also require a change of occupancy.

**Assembly Action:**

**None**

**Final Action Results**

**EB39-15**

**AS**

## Code Change No: **EB40-15**

### Original Proposal

**Section: 410.8.1, 705.1.1**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**410.8.1 Entrances.** ~~Accessible entrances shall be provided in accordance with Section 1105.~~

**Exception:**-Where an *alteration* includes alterations to an entrance that is not accessible, and the *facility* has an accessible entrance, the altered entrance is not required to be accessible, unless required by Section 410.7. Signs complying with Section 1111 of the *International Building Code* shall be provided.

**705.1.1 Entrances.** Where an *alteration* includes alterations to an entrance that is not accessible, and the *facility* has an accessible entrance ~~on an accessible route~~, the altered entrance is not required to be accessible unless required by Section 705.2. Signs complying with Section 1111 of the *International Building Code* shall be provided.

**Reason:** There is a series of proposals intended to coordinate the provisions in the first and second options in the IEBC. Requirements for entrances in Sections 410.8.2 and 705.1.1 should match.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal provides consistency between the work area method and prescriptive language in terms of accessible entrances. This is also seen as a reasonable accommodation when an accessible entrance is already provided elsewhere.

**Assembly Action:**

**None**

### Final Action Results

**EB40-15**

**AS**

**Code Change No: EB41-15**

**Original Proposal**

**Section: 410.8.4, 806.2**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**410.8.4 Stairways and escalators in existing buildings.** ~~In alterations, change of occupancy or additions where~~ Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Section 1104.4 of the *International Building Code*.

**806.2 Stairways and escalators in existing buildings.** ~~In alterations where~~ Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Sections 1104.4 and ~~1104.5~~ of the *International Building Code*.

**Reason:** There is a series of proposals intended to coordinate the provisions in the first and second options in the IEBC. Requirements for stairways in Sections 410.8.4 and 806.2 should match.

While 806.2 is Level II alteration, change of occupancy and additions reference this section. Adding "change or occupancy or additions" under Level 2 could be confusing, so the best alternative is to remove the list from both 410.8.4 and 806.2. Where this is applicable will be handled through the references to this section.

G208-06/07 added the language in Section 410.8.4 as part of coordination with ADA 206.2.3.1. The ADA approach seems more reasonable for when and elevator or platform lift would be required. G241-12 struck the reference to 1104.5 in Section 410.8.4 so that the accessible route will be permitted to be provided in the same area as the new construction, and is not require it to be located elsewhere in the building. A reference to Section 1104.5 could be interpreted to require the accessible route to be provided in another part of the building if the new stairway was not on a general circulation route (such as a 2nd egress stairway).

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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**Cost Impact:** Will not increase the cost of construction

The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal makes the provisions more consistent with ADA and provides clarification. In addition, the provisions are more consistent between the work area method and prescriptive method.

**Assembly Action:**

**None**

**Final Action Results**

**EB41-15**

**AS**

**Code Change No: EB45-15**

**Original Proposal**

**Section: 410.8.9, 705.1.6**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**410.8.9 Jury boxes and witness stands.** In *alterations*, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the required means of egress.

**705.1.6 Jury boxes and witness stands.** In *alterations*, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where ramp or lift access ~~poses a hazard by restricting~~ restricts or ~~projecting projects~~ into a required means of egress.

**Reason:** There is a series of proposals intended to coordinate the provisions in the first and second options in the IEBC. Requirements for courtrooms in Sections 410.8.9 and 705.1.6 should match.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal clarifies the intent and removes subjective terms with regard to the obstruction of means of egress.

**Assembly Action:**

**None**

**Final Action Results**

**EB45-15**

**AS**

## Code Change No: **EB47-15**

### Original Proposal

**Section: 410.9, 1204.1, 1205.15**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**410.9 Historic buildings.** These provisions shall apply to *facilities* designated as historic structures that undergo *alterations* or a *change of occupancy*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the *facility*, as determined by the ~~applicable governing authority~~ having jurisdiction, the alternative requirements of Sections 410.9.1 through 410.9.4 for that element shall be permitted.

**Exception:** Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in historical buildings.

**1204.1 Accessibility requirements.** The provisions of Sections 705, 806 and 906, as applicable, shall apply to facilities designated as historic structures that undergo *alterations*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the ~~building or facility~~, as determined by the ~~code official authority~~ having jurisdiction, the alternative requirements of Sections 1204.1.1 through 1204.1.4 for that element shall be permitted.

**Exception:** Type B dwelling or sleeping units required by Section 1107 of the *International Building Code* are not required to be provided in historical buildings.

**1205.15 Accessibility requirements.** The provisions of Section 1012.8 shall apply to facilities designated as historic structures that undergo a *change of occupancy*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, ~~ramps~~, entrances, or toilet rooms would threaten or destroy the historic significance of the ~~building or facility~~, as determined by the authority having jurisdiction, the alternative requirements of Sections 1204.1.1 through 1204.1.4 for those elements shall be permitted

**Exception:** Type B dwelling or sleeping units required by Section 1107 of the ~~International Building Code~~ International Building Code are not required to be provided in historical buildings.

**Reason:** There is a series of proposals intended to coordinate the provisions in the first and second options in the IEBC. Requirements for historic building in Sections 410.9, 1204.1 and 1205.5 should match. By changing 410.9 and 1204.1 to match 1205.15, 'the authority having jurisdiction' can include historical preservation offices and oversight. In Section 1205.15, 'ramps' are not part of the list of requirements in the following sections; therefore, they should not be in this list. The definition for the term 'facility' includes buildings, therefore you can use one descriptor.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was approved as the term “code official” may not be the authority with regard to historic buildings. In addition, the use of the term “authority having jurisdiction” is a more appropriate term than “applicable governing authority.” There was a suggestion that a definition for “authority having jurisdiction” would be useful.

**Assembly Action:**

**None**

**Final Action Results**

**EB47-15**

**AS**

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## Code Change No: **EB48-15**

### Original Proposal

**Section: 1204.1.3, 410.9.3**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**410.9.3 Entrances.** At least one ~~main~~public entrance shall be accessible.

**Exceptions:**

1. If a ~~main~~public entrance cannot be made accessible, an accessible ~~nonpublic~~ entrance that is unlocked while the building is occupied shall be provided; or
2. If a ~~main~~public entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1111 of the *International Building Code* shall be provided at the ~~primary~~public entrance and the accessible entrance.

**1204.1.3 Entrances.** At least one ~~main~~public entrance shall be accessible.

**Exceptions:**

1. If a ~~main~~public entrance cannot be made accessible, an accessible ~~nonpublic~~ entrance that is unlocked while the building is occupied shall be provided; or
2. If a ~~main~~public entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1111 of the *International Building Code* shall be provided at the public entrance and the accessible entrance.

**Reason:** There is a series of proposals intended to coordinate the provisions in the first and second options in the IEBC. Requirements for toilet rooms in Sections 410.9.3 and 1204.1.3 should match.

The term 'public' is used in ADA instead of 'main'. The term 'nonpublic' is removed from exception 1 so that this can be any entrance to the building; also this is consistent with Exception 2. Adding the signage reference is consistent with Entrances in Sections 410.8.1 and 705.1.1.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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**Cost Impact:** Will not increase the cost of construction

The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The term "public" is preferred as it correlates with ADA and the IBC for accessibility. The term public entrance is more easily determined than main exit. It was also pointed out that the "main" entrance may not be "public."

**Assembly Action:**

**None**

**Final Action Results**

**EB48-15**

**AS**

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## Code Change No: **EB49-15**

### Original Proposal

#### Section: 410.8.11 (New), 806.3 (New)

**Proponent:** Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)

**410.8.10 Toilet rooms.** Where it is *technically infeasible* to alter existing toilet and bathing rooms to be *accessible*, an *accessible* family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the *International Building Code* is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, provide directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

#### Add new text as follows:

**410.8.11 Additional toilet and bathing facilities** In assembly and mercantile occupancies, where additional toilet fixtures are added, at least one accessible family or assisted-use toilet room shall be provided where required by Section 1109.2.1 of the International Building Code. In recreational facilities, where additional bathing rooms are being added, at least one family or assisted-use bathing rooms shall be provided where required by Section 1109.2.1 of the International Building Code.

**705.1.9 Toilet rooms.** Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the *International Building Code* is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

**806.3 Toilet and bathing facilities** In assembly and mercantile occupancies, where additional toilet fixtures are added, at least one accessible family or assisted-use toilet room shall be provided where required by Section 1109.2.1 of the International Building Code. In recreational facilities, where additional bathing rooms are being added, at least one family or assisted-use bathing rooms shall be provided where required by Section 1109.2.1 of the International Building Code.

**Reason:** The current text is unclear where a family or assisted use toilet room needs to be added within a facility. There is a correlative change to Section 410.8.10 and 705.1.9 to separate this bathroom from where a unisex bathroom is permitted as an option when the men's and women's bathrooms cannot be made accessible.

**410.8.11** The language of the requirement is changed to make it clear that the intent is to provide a family or assisted-use toilet room when it would normally be required by Section 1109.2.1 of the IBC. The manner in which it is currently written, the text seems to imply that the family or assisted-use toilet room would be required regardless of the occupancy classification of the facility. If so, it would impose a requirement more strict than that for new construction.

**806.3** The same language as shown in the revised Section 410.8.11 is being added to the Work Area method for Level 2 Alterations. It seems only appropriate that the requirement should apply to both methodologies.

**Cost Impact:** Will increase the cost of construction

The added requirement to the work area method will increase the cost of construction for some buildings.

However, the clarification to the existing text will likely reduce the cost of construction. The specific balance will depend on which method is used and what type of project is involved.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** There was agreement that family or assisted bathrooms are needed in these types of occupancies and uses when additional toilet fixtures are being added. In addition, this requirement is consistent with the IBC requirements.

**Assembly Action:**

**None**

**Final Action Results**

**EB49-15**

**AS**

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**Code Change No: EB52-15**

**Original Proposal**

**Section: 601.2, 608.1**

**Proponent:** David Bonowitz, David Bonowitz, S.E., representing Existing Buildings Subcommittee, National Council of Structural Engineers Associations (dbonowitz@att.net)

**Revise as follows:**

**601.2 Conformance.** The work shall not make the building less conforming than it was before the ~~repair was undertaken~~ damage occurred.

**608.1 General.** Existing mechanical systems undergoing *repair* shall not make the building less conforming than it was before the ~~repair was undertaken~~ damage occurred.

**Reason:** The current text talks about the condition "before the repair was undertaken." This means the damaged condition. What these provisions intend is to restore the condition that existed before the damage, not before the repair.

**Cost Impact:** Will not increase the cost of construction  
The proposal is editorial.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal is a good clarification that the focus should be on the state of the building, system or equipment prior to the damage that has occurred versus the before the repair was undertaken.

**Assembly Action:**

**None**

**Final Action Results**

**EB52-15**

**AS**

**INTERNATIONAL CODE COUNCIL®**

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**Code Change No: EB55-15**

**Original Proposal**

**Section: 705.1.5**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Delete without substitution:**

~~**705.1.5 Dining areas.** An accessible route to raised or sunken dining areas or to outdoor seating areas is not required provided that the same services and decor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.~~

**Reason:** There is a series of proposals intended to coordinate the provisions in the first and second options in the IEBC. This section was deleted from Chapter 4 (when it was IBC Chapter 34) by E95-01. All alterations should be affected by the building code in the same manner. Providing an exception for dining areas is inconsistent with the purpose and intent of the code. An existing restaurant would be able to use technical infeasibility and the 20% maximum cost for the accessible route exceptions.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The committee agreed with the concept that the deletion both makes the work area method consistent with the prescriptive method and that a blanket exclusion is inappropriate. As the reason statement notes, the technical infeasibility concept and 20% cost limit are available to designers.

**Assembly Action:**

**None**

**Final Action Results**

**EB55-15**

**AS**

**Code Change No: EB57-15**

**Original Proposal**

**Section: 705.1.5**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Delete without substitution:**

~~**705.1.5 Dining areas.** An accessible route to raised or sunken dining areas or to outdoor seating areas is not required provided that the same services and decor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.~~

**Reason:** There is a series of proposals intended to coordinate the provisions in the first and second options in the IEBC. This section was deleted from Chapter 4 (when it was IBC Chapter 34) by E95-01. All alterations should be affected by the building code in the same manner. Providing an exception for dining areas is inconsistent with the purpose and intent of the code. An existing restaurant would be able to use technical infeasibility and the 20% maximum cost for the accessible route exceptions.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification and coordination of current requirements; therefore, there is no impact on the cost.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The committee agreed with the concept that the deletion both makes the work area method consistent with the prescriptive method and that a blanket exclusion is inappropriate. As the reason statement notes, the technical infeasibility concept and 20% cost limit are available to designers.

**Assembly Action:**

**None**

**Final Action Results**

**EB57-15**

**AS**

**Code Change No: EB61-15**

**Original Proposal**

**Section: 804.2.4**

**Proponent:** Adolf Zubia, IAFC Fire & Life Safety Section, representing IAFC Fire & Life Safety Section

**Revise as follows:**

**804.2.4 Other required automatic sprinkler systems.** In buildings and areas listed in Table 903.2.11.6 of the *International Building Code*, *work areas* that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. The *work area* is required to be provided with an automatic sprinkler system in accordance with the *International Building Code* applicable to new construction; and
- ~~2. The building has sufficient municipal water supply for design of an automatic sprinkler system available to the floor without installation of a new fire pump.~~
2. The building site has sufficient municipal water supply for design and installation of an automatic sprinkler system.

**Reason:** This proposal is submitted by Fire and Life Safety Section of the International Association of Fire Chiefs. The intent of this code change is to address the concern that the municipal water supply must be available at the floor level where the work area is located without the installation of a fire pump. The determining factor for an automatic fire sprinkler system should be whether there is adequate water at the site, not whether a fire pump may be required when achieving an acceptable level of public safety.

This code change revises the text so that the adequacy of a municipal water supply at the building site is the determining factor. When the work area exceeds 50% of the floor area and a fire sprinkler system would be required. The possible installation of a fire pump to supplement the water flow and pressure would not be the deciding factor when providing fire safety to the work area.

**Cost Impact:** Will not increase the cost of construction  
The cost of fire pump will be added to the cost of the fire sprinkler system. However, the same fire pump should be adequate for future fire sprinkler system installations in the building, therefore, the fire pump will be a one-time cost for the building and future alterations.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

~~804.2.4~~ 904.1.4 **Other required automatic sprinkler systems.** *No change to text.*

**Committee Reason:** This proposal was seen as reasonable but only if moved to the Level 3 alterations provisions. The modification simply moved the section from Section 804.2.4 to Section 904.1.4 bringing the provisions into Level 3 alterations.

**Assembly Action:**

**None**

**Final Action Results**

**EB61-15**

**AM**

**Code Change No: EB62-15**

**Original Proposal**

**Section: 804.4.1.7**

**Proponent:** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

**Revise as follows:**

**804.4.1.7 Group R-4.** A manual fire alarm system shall be installed in *work areas* of Group R-4 residential care/ assisted living facilities as required by Section 1103.7.7 of the *International Fire Code* for existing Group R-4 occupancies.

**Reason:** This proposal is a clarification of requirements and correlation of requirements. Smoke alarms are addressed in Section 804.3.

There is a Group B proposal to remove this requirement from new Group R-4s to have fire alarm systems in IBC/IFC Section 907.2.10 and from mandatory retrofit from IFC 1103.7.7. If this is successful, this section will also be deleted. If that is not approved, this clarification is needed.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This proposal is a clarification only.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal is simply a clarification with the addition of the term "manual." Section 1103.7.7 of the IFC only requires a manual fire alarm system. Smoke alarms are dealt with separately in Section 804.4.3.

**Assembly Action:**

**None**

**Final Action Results**

**EB62-15**

**AS**

## Code Change No: **EB63-15**

### Original Proposal

**Section:** 805.3, 805.3.1, 805.3.1.1, Table 805.3.1.1(1) (New), Table 805.3.1.1(2) (New)

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**805.3 Number of exits.** The number of exits shall be in accordance with Sections 805.3.1 through 805.3.3.

**805.3.1 Minimum number.** Every story utilized for human occupancy on which there is a *work area* that includes exits or corridors shared by more than one tenant within the *work area* shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the *International Building Code*. In addition, the exits shall be permitted to comply with Sections 805.3.1.1 and 805.3.1.2.

**805.3.1.1 Single-exit buildings.** Only one exit is required from spaces, of the following occupancies: A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following exist:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 805.3.1.1(1) or 805.3.1.1(2).
- ~~1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).~~
- ~~2. Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m<sup>2</sup>), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~
- ~~3. Open parking structures where vehicles are mechanically parked.~~
- ~~4. In Group R-4 occupancies, the maximum occupant load excluding staff is 16.~~
- ~~5. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.~~
- ~~6. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:
 
  - ~~6.1. The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or~~
  - ~~6.2. The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.~~~~
2. In Group R-1 or R-2, non-sprinklered buildings, individual single-story or multistory dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
  - 2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).
  - 2.2. The building is not more than three stories in height; all 3rd story space is part of dwelling



with an exit access doorway on the 2nd story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance doors shall not exceeds 50 feet (15 240 mm).

7. In Group R-2, H-4, H-5 and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).
8. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m<sup>2</sup>) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.
- 3.9. In buildings of Group R-2 occupancy of any height number of stories and with not more than four dwelling units per floor; served by an interior exit stairway with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the *International Building Code* or an exterior exit stairway outside stairway as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is a maximum of 20 feet (6096 mm).
10. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.

**TABLE 805.3.1.1(1)**  
**STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, First or second story above grade plane	R-2 <sup>2</sup>	4 dwelling units	50 feet
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot=3048

NP=Not Permitted.

NA=Not Applicable.

- a. Group R-2, non-sprinklered and provided with emergency escape and rescue openings in accordance with Section 1030 of the *International Building Code*.

**TABLE 805.3.1.1(2)**  
**STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	B, F-2, S-2 <sup>a</sup>	35	75
Second story above grade plane	B, F-2, S-2 <sup>a</sup>	35	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8mm.

NP=Not Permitted

NA=Not Applicable

- a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet (30 480mm).

**Reason:** The current provisions are not keeping up with the allowances and changes in language for new buildings. This could be interpreted as existing buildings being more restrictive than new construction. Many items match IBC new construction allowances rather than allowing for additional options. To keep items correlated over time, the change to Section 805.3.1 is to allow for any option permitted in new construction. The reasons for the changes to Section 805.3.1.1 are found below. What can be put in tables similar to Table 1006.3.2(1) and Table 1006.3.2(2) has been made so to improve correlation and consistency over time.

Item 1 is permitted for new construction, IBC Table 1006.3.2(2); therefore, it is proposed to be deleted.

Item 2 - This is the new item 1 and the table. The area is translated to occupant load (3500 sq.ft./100 sq.ft. per occupant) and added in a table. This is consistent with the approach for new construction and should increase consistency over time. The last sentence is addressing exit stairway enclosures, which are already addressed in stairway provisions. Note a in the table is so that it is understood that this allowance will not override the allowance for 100 feet in open parking that is permitted in new construction.

Item 3 is for mechanical parking garages is permitted in IBC Section 1006.3.2 Item 3; therefore, it is proposed to be deleted. Item 4 for Group R-4 is technically incorrect with the language using occupant load rather than number of residents; in addition a single exit is permitted in IBC Section 1006.3.2 Item 4; therefore, it is proposed to be deleted.

Item 5 is based on old travel distance allowances for single exit apartment buildings – so this limitation should be for only non-sprinklered buildings. Group R-1 does not typically have dwelling units, so this is not logical for a hotel. This item should be deleted in favor new construction allowances in Table 1006.3.2(1) for apartment buildings. The last sentence is addressing exit stairway enclosures, which are already addressed in stairway provisions; therefore, it is proposed to be deleted.

Item 6 is more restrictive than the multi-story dwelling units permitted in Section 1006.3.2, Item 5. Group R-1 does not typically have dwelling units, so terminology is not logical for a hotel. If this is needed for large sleeping unit, this allowance should be added to new construction in IBC. For sprinklered buildings this item should be deleted in favor new construction allowances in Section 1006.3.2 Item 5 for multi-story dwelling units. The revised item 2 is limited to non-sprinklered buildings and the terminology has been updated. The occupant load was added to be consistent with the previous limit on dwelling units and travel distance before sprinklers were added (2003 IBC Section 1013.3 and 1014.1). There is no intent to change to the technical criteria.

Item 7 – Rooming houses a limiting factor for Group R-2 in new construction – current text would apply this to all Group R-2. In addition, R-2 congregate residences are now 16 or more. To fit into the maximum of 10 occupants, you are a Group R-3 now. Group R-3 has always had single exit with no travel distance, so this would be more restrictive than new sprinklered or existing not sprinklered. Child care centers could be read as E and I-4. Group I-4 is part of Group I and is the same for new construction. This requirement exceeds Group E requirements for new construction and should not be applicable. The provisions for I, H-4 and H-5 match new construction in Table 1006.3.2(2). Therefore, it is proposed to be deleted.

Item 8 is addressed for new construction in Table 1006.3.2(2), including the emergency escape window requirement; therefore, it is proposed to be deleted.

Item 9 (new Item 3) allows for a different travel distance measurement and additional number of stories for apartment buildings with 4 or fewer per story. Since this is unlimited height, this would apply to sprinklered and non-sprinklered existing buildings. The change is intended to be editorial only to match new terminology.

Item 10 is addressed already permitted for new construction in Section 1006.3.2 Item 3; therefore, it is proposed to be deleted.

**Cost Impact:** Will not increase the cost of construction

The code change proposal will not increase the cost of construction. The intent of the proposal is coordination and an update to new terminology. It is not intended to increase requirements.

## Report of Committee Action Hearings

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**805.3.1.1 Single-exit buildings.** A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following exist:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 805.3.1.1(1) or 805.3.1.1(2).
2. In Group R-1 or R-2, non-sprinklered buildings, individual single-story or multistory dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
  - 2.1 The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).
  - 2.2 The building is not more than three stories in height; all 3rd story space is part of a dwelling with an exit access doorway on the 2nd story; and the portion of the exit access travel distance from the door to any habitable room with any such unit to the unit entrance doors shall does not exceed 50 feet (15 240mm).
3. In buildings of Group R-2 occupancy of any number of stories and with not more than four dwelling units per floor; served by an interior exit stairway with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the *International Building Code* or an exterior exit stairway where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is a maximum of 20 feet (6096mm).

**Committee Reason:** This proposal was approved as it aligns the allowance of single exit buildings with the IBC. It would be inappropriate for the IEBC to be more restrictive than the IBC. The modification simply makes an editorial revision to Item 2.2 to be consistent with the terminology used in Item 2.1. The revision revises “shall not exceeds” to “does not exceed.”

**Assembly Action:**

**None**

**Final Action Results**

**EB63-15**

**AM**

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## Code Change No: **EB64-15**

### Original Proposal

#### Section: 805.3.1.1

**Proponent:** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

#### Revise as follows:

**805.3.1.1 Single-exit buildings.** Only one exit is required from buildings and spaces of the following occupancies:

1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).
2. Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m<sup>2</sup>), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
3. Open parking structures where vehicles are mechanically parked.
- ~~4. In Group R-4 occupancies, the maximum occupant load excluding staff is 16.~~
4. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
5. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:
  - 5.1 The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or
  - 5.2 The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.
6. In Group R-2 occupancies consisting of sleeping units, H-4, H-5 and I occupancies ~~and in rooming houses and child care centers~~, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).
7. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m<sup>2</sup>) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.
8. In buildings of Group R-2 occupancy of any height with not more than four dwelling units per floor; with a smokeproof enclosure or outside stairway as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.
9. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.

**Reason:** The terminology is old and many in the list are addressed by new construction. IEBC Section 805.3.1. already says any single exits scenarios in IBC are permitted here. The CTC Committee scope limits them to Items 4 and 7.

- Item 4 – Group R-4 is already addressed in new, so this is not needed. In addition, Group R-4 is based on the number of care recipients, not the occupant load, so the terminology is incorrect. If it is kept it should match the text in new construction – IBC Section 1006.3.2, Item 4. " Group R-3 and R-4 occupancies shall be permitted to have one exit or access to a single exit." However, to keep consistency over time, it is preferred that this be deleted.
- Item 7 – In new provisions this limit is for Group R-2 with sleeping units. This could be read to be all Group R-2. Child care centers could be read to be both Group E and I-4. In new construction this occupant load and travel distance is Group I-4.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This correlates IEBC with IBC for this extent of an alteration.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal is consistent with EB63-15 but focuses only on care occupancies. The committee approved the proposal or consistency with the action taken on EB63-15 and as a precaution so that minimally these issues are addressed. The committee also agreed with the proponent's reason.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB64-15**

**AS**

**Code Change No: EB65-15**

**Original Proposal**

**Section(s): 906.2**

**Proponent:** Dominic Marinelli, representing United Spinal Association (dmarinelli@accessibility-services.com)

**906.2 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered, the requirements of Section 1107 of the *International Building Code* for Type B units and Chapter 9 of the *International Building Code* for visible alarms apply only to the quantity of the spaces being altered.

**Exception:** ~~Group I-1, I-2, R-2, R-3 and R-4 dwelling or sleeping units where the first certificate of occupancy was issued before March 15, 1991 are not required to provide Type B dwelling or sleeping units.~~

**Reason:** The purpose of this code change proposal is to eliminate a conflict in the IEBC between the requirements in the Prescriptive and Work Area methods. The deletion of the exception to Section 906.2 would coordinate with Section 410.8.8. The intent is to coordinate the requirements for Type B dwelling units within the options available in the IEBC. In the prescriptive method, Section 906.2 requirement is found in the 2nd sentence of Section 410.8.8. (The first sentence matches IEBC Section 1105.4).

**410.8.8 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being added.

Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being altered.

United Spinal does not support the exception to Section 906.2, and believes it should be deleted for several reasons.

The current exception to Section 906.2 includes a March 15, 1991 as a trigger date. This was inserted as a coordination item with Fair Housing Act (FHA) requirements. However, this is not quite correct. It will be extremely difficult for code officials to determine as the first certificate of occupancy date is different than the date of First Occupancy as defined by the Fair Housing Accessibility Guidelines (i.e., the date that tenants first occupied their apartments). Adding a trigger date would require additional research by the architect or code official to determine if these code requirements were applicable or not. While the jurisdiction does hold records of certificate of occupancy, they do not information on actual occupancy of a space.

In addition, even if this was a match, including the trigger date of the FHA could significantly reduce the number of buildings where these basic adaptability features are required. Remember that these are already major alterations, not minor fixes. In instances where existing structure would prevent compliance with Type B features, permit applicants can take advantage of the technical infeasibility exception offered in the IEBC. It should be noted that Section 410.7 Exception 5 and 705.2 Exception 5 already exempts the building from improving the accessible route, so this requirement is only for the element being altered.

The intent of the original requirement was to require adaptable Type B features in Level III alterations. This requirement will allow for basic adaptations to be made in the Type B unit in the future (but will not require accessible turning spaces, removable base cabinets, maneuvering clearance at bedroom and bathroom doors, or the installation of grab bars).

**Cost Impact:** Will not increase the cost of construction  
This proposal as it will match current language in Section 410.8.8.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The committee approved the proposal for consistency on the action on EB44-15. In addition, determining the certificate of occupancy for existing buildings can be problematic in smaller jurisdictions.

**Assembly Action:**

**None**

## Public Comments

### Public Comment 1:

**Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org) requests Approve as Modified by this Public Comment.**

**906.2 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered, the requirements of Section 1107 of the *International Building Code* for Type B units and Chapter 9 of the *International Building Code* for visible alarms apply only to the quantity of the spaces being altered.

**Exception:** Group I-1, I-2, R-2, R-3 and R-4 dwelling or sleeping units where the first certificate of occupancy was issued before March 14, 1991 are not required to provide Type B dwelling or sleeping units.

**Commenter's Reason:** The purpose of the proposed exception is to align the code with the Fair Housing Act. For reference, FHA regulations state "The design requirements apply to buildings built for first occupancy after March 13, 1991, which fall under the definition of "covered multifamily dwellings."

The committee reason states a concern that this exception would be included in the prescriptive method AND the work area method, as if that was problematic. Actually this exception should apply to both instances, because that would align both methods with the FHA and avoid confusion.

The second reason which the committee discussed was that determining when the certificate of occupancy was issued. This is not as big of a challenge as some made it out to be. The vast majority of counties have this information available if the Department of Building Safety doesn't. Most areas of a town or city fall into certain decades of construction anyway, making it clear that a house was occupied long before (or after) the cut-off date.

Note the only modification made to the original code text was a minor adjustment to the date in order to bring it fully in line with the FHA provision.

See the similar public comment for EB 44-15.

## Final Action Results

EB65-15

AMPC1

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**Code Change No: EB67-15**

**Original Proposal**

**Section: Table 1012.4, Table 1012.5**

**Proponent:** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

**Revise as follows:**

**TABLE 1012.4 (1012.4)  
MEANS OF EGRESS HAZARD CATEGORIES**

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4 <u>Condition 2</u>
4	B, F-1, R-3, <u>R-4 Condition 1</u> , S-1
5 (Lowest Hazard)	F-2, S-2, U

**TABLE 1012.5 (1012.5)  
HEIGHTS AND AREAS HAZARD CATEGORIES**

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4 <u>Condition 2</u>
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, <u>R-4 Condition 1</u> , U

**Reason:** The change in the table is consistent with the identification of different levels of hazards for the residents in a Group R-4. The conditions are based on the egress capability of the residents. Group R-4 Condition 1 is more consistent with Group R-3. Group R-2 Condition 2 is closer to a Group I-1.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This is a reduction in requirements for Group R-4 Condition 1.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The committee agreed with the proponent’s reason. More specifically, the proposal appropriately divides the two conditions into the proper risk categories in Section 1012.

**Assembly Action:**

**None**



**Final Action Results**

**EB67-15**

**AS**

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## Code Change No: **EB68-15 Part I**

### Original Proposal

**Section: 1106 (New), 1106.1 (New), 1106.1.1 (New), 1106.1.2 (New), 1401.2.3.1 (New), 402.6 (New)**

**Proponent:** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

**THIS IS A 2 PART CODE CHANGE PROPOSAL. BOTH PARTS WERE HEARD BY THE IEBC COMMITTEE.**

**Add new text as follows:**

### **SECTION 1106** **STORM SHELTERS**

**1106.1 Addition to a Group E occupancy.** Where an addition is added to an existing Group E Occupancy located in an area where the shelter design wind speed for tornados is 250 mph in accordance with Figure 304.2(1) of ICC500 and the occupant load in the addition is 50 or more, the addition shall have a storm shelter constructed in accordance with ICC500.

**Exceptions:**

1. Group E day care facilities.
2. Group E occupancies accessory to places of religious worship.
3. Additions meeting the requirements for shelter design in ICC500.

**1106.1.1 Required occupant capacity** The required occupant capacity of the storm shelter shall include all the buildings on the site, and shall be the greater of the following:

1. The total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy.
2. The occupant load of any indoor assembly space that is associated with the Group E occupancy.

**Exceptions:**

1. Where an addition is being added on an existing Group E site, and where the addition is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all the buildings on the site, the storm shelter shall at a minimum accommodate the required capacity for the addition.
2. Where approved by the code official, the required occupant capacity of the shelter shall be permitted to reduced by the occupant capacity of any existing storm shelters on the site.

**1106.1.2 Location** Storm shelters shall be located within the buildings they serve, or shall be located where the maximum distance of travel from at least one exterior door of each building to a door of the shelter serving that building does not exceed 1000 ft. (304.8 m)

**1401.2.3.1 Additions to Group E facilities.** For additions to Group E occupancies, storm shelters shall be provided in accordance with Section 1106.1.

**402.6 Additions to Group E facilities.** For additions to Group E occupancies, storm shelters shall be provided in accordance with Section 1106.1.

**Reason:** This public proposal is submitted jointly by the National Institute of Standards and Technology and the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

As documented in the proposal that created the original requirements for installation of storm shelters in schools for the 2015 IBC, even schools built to modern building codes are susceptible to collapse during tornadoes. That proposal described a number of schools destroyed or severely damaged in several 2011 tornadoes in Missouri, Georgia, and Alabama. As documented in the National Institute of Standards and Technology's final report on its technical investigation of the Joplin, Missouri tornado of May 22, 2011, that one storm severely damaged or destroyed 10 of the 20 public schools in the City of Joplin, and several parochial schools.

In 2013, seven schoolchildren died in Oklahoma at the Plaza Towers Elementary School during the Newcastle-Moore tornado on May 20. They were taking refuge in the hallway of the New Main Classroom Building, in their designated tornado safety area, when the masonry hallway walls collapsed on them (see Figure 1). Several more students and teachers were injured in this and other buildings on the same campus. The Newcastle-Moore tornado also destroyed the Briarwood Elementary School, injuring several people, and collapsed the Gymnasium at Highland East Junior High School.

In recognition of the need to provide protection for schoolchildren from tornadoes, and that the existing school building stock is not capable of providing that protection, some states and communities have already begun to take action. Following the death of 8 students at Enterprise High School in a 2007 tornado, the State of Alabama enacted legislation in 2010 (Act 2010-746) requiring that all public schools incorporate tornado shelters built to ICC 500. Illinois recently became the second state to require ICC 500 tornado shelters in all new school building construction, when the Governor signed Public Act 098-0883 into law in August 2014.

Another positive trend in school shelter construction is that some of these facilities are also being made available as public shelters. For example, during the rebuilding following the 2011 tornado, the Joplin School District has been proactively outfitting its new and rebuilt schools with tornado shelters, and installing shelters at undamaged schools as well. These shelters, commonly in gymnasiums, are sized not only to handle the full daytime occupant load of the school but also the population of the surrounding neighborhoods within a quarter to half mile radius. The investment of public funds in these shelters is further leveraged to improve public safety by making them available whenever there is a threat from tornadoes, 24 hours a day and year-round. The shelter doors are automatically unlocked as soon as a tornado watch goes into effect. Tornado shelters at several school districts in Arkansas (Greenwood, Fort Smith, Alma, and Van Buren Public Schools) are also open to the public. At these shelters, the doors are automatically unlocked when the tornado siren sounds.

#### Explanation of Provisions.

- IBC Section 423.1.1 Scope. The 'safe refuge' has been revised to 'protection' so that this term will not be confused with other refuge areas already required in the code. The remainder of the change is for consistency with the revisions to the scoping language in the ICC 500-2014.
- IBC Section 423.4 Group E occupancies. The last sentence is removed and addressed in new Section 423.4.1. Section 303.1.3 states that assembly spaces associated with Group E occupancies are considered part of the Group E occupancy. However, many schools have assembly type facilities (e.g., gymnasiums with bleachers, multi-purpose rooms used for after school meetings or school registration, libraries used for school board meetings, theaters with concerts and shows open to the parents and public, gyms used for science fairs or intermural sports) that could include the public outside of normal school hours. The purpose of the storm shelter is to provide safety for the school occupants at the time of the emergency.
- IBC Section 423.4.1 Capacity. With those many uses of a school building, not all spaces will be fully occupied at the same time that all the classrooms are fully occupied. Worst case occupant load is used for all spaces for fire exiting, but total occupant load for the building is excessive for storm shelter design. The determination for the required capacity of the shelter is based on the number of staff and students that will be in the school during a typical school day or any indoor assembly space that would be fully utilized outside school hours, whichever is greater. Thus, rather than the total occupant load of the building, the capacity of the shelter is appropriately based on occupant load described in the two scenarios described in Item 1 and 2. It is not the intent of these provisions to require outdoor areas on the site (e.g., sports fields and bleachers) to be considered since that area is not a building. In new construction, a fire wall creates a separate building. If a facility adds on with a fire wall or puts another building on an existing Group E site, this is another opportunity to provide a storm shelter for that school. The designer would be responsible for determining the required storm shelter capacity for both the new building and for the total facility on the site. Depending on what type of rooms are in the new building, what proportion of the space can be used for a shelter is information that can be calculated using the provisions in ICC 500, Chapter 5. If this is a small new building, the shelter within the building will be required to at least accommodate the students and staff within that new building. If the new building is large enough that a shelter could accommodate all the students and staff on the site, the shelter will be required to accommodate the students and staff on the site. It is not the intent of the provisions to require the new building to be made bigger just to meet the shelter provisions. If there is an existing storm shelter on the site, that can be considered to reduce the capacity required for the new shelter. Due to travel distances and possible age of the existing shelter (perhaps built before ICC 500), the code official can have input into the decision.

The term site is currently defined in the codes:

**SITE.** A parcel of land bounded by a lot line or a designated portion of a public right-of-way.

- IBC Section 423.4.2 Location. The new language in IBC 423.4.2 requires the shelter to be within a building or within a distance of travel of a 1000 feet or less. Where the shelter is remote, this would be approximately a 4 minute walk at 3 mph, which is an average speed that humans tend to walk. Add that to an assumed few hundred feet travel distance to first reach the exit of the building being served, and the total travel time is 5 minutes. This is consistent with current FEMA guidance for a maximum five minute walk time to reach the tornado shelter.

Figure 1. Damage to the New Main Classroom Building at Plaza Towers Elementary School. The seven schoolchildren died in the central hallway when the classroom walls collapsed on them. An additional two staff members and one student were injured in this building.



#### **Bibliography:**

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<sup>2</sup>Preliminary Reconnaissance of the May 20, 2013, Newcastle-Moore Tornado in Oklahoma. Erica D. Kuligowski; Long T. Phan; Marc L. Levitan; David P. Jorgensen. NIST SP 1164. December 2013. Available at [http://www.nist.gov/manuscript-publication-search.cfm?pub\\_id=914721](http://www.nist.gov/manuscript-publication-search.cfm?pub_id=914721).

<sup>3</sup>See <http://www.joplinschools.org/domain/635> for more information about Joplin community safe rooms.

<sup>4</sup>See for example <http://www.greenwoodpd.org/Community/Storm-Shelters>.

#### **Cost Impact:**

Will increase the cost of construction

This proposal will increase the cost of construction.

The most recent information on costs is available in FEMA P-361, Design and Construction Guidance for Community Safe Rooms (Second Edition, August, 2008). All of the values described below related to cost come from that publication. It should be noted that tornado shelters designed and constructed in accordance with FEMA P-361 guidelines are called safe rooms. FEMA's safe room guidelines are similar to ICC 500, but there are some differences. Where there are differences, in all cases, FEMA requirements are more stringent than ICC 500, as documented on page 1-2 of FEMA P-361, which states "All safe room criteria in this publication meet or exceed the shelter requirements of ICC 500." Shelters built to ICC 500 would therefore cost less, but there is no data available to quantify that cost reduction.

FEMA 361 describes safe room costs for new building projects as follows. "For large new building projects, however, the percent increase in the overall project cost is quite small. For example, many safe rooms protecting 200 to 300 occupants being constructed as part of a new school have added only 1 to 2 percent to the total project cost when the safe room was included in the design process at the beginning of the project."

Based on review of 36 safe room grant applications from 2008, the average safe room cost per square foot for projects considered technically feasible and effective for providing protection was \$188/sf. From more expanded grant application data from years 2005 to 2008, the percent increase in building cost to harden a portion of a building to meet the safe room requirements ranged from 5-32 percent (cost increase per square foot of the safe room area being hardened). More information on safe room costs can be found in Chapter 2 of FEMA P-361.

Costs for storm shelters are anticipated to decrease as their use becomes more widespread. The adoption of requirements for storm shelters in tornado prone areas for Group E Occupancies and first responder facilities in the 2015 IBC will lead to installation of many more storm shelters than are currently being built. Subsequently, shelters will become less of a specialty item from a design and construction standpoint. As the market expands for specialty products needed in shelters, like tornado resistant doors, windows and shutters, economies of scale and new manufacturers joining the industry will also lead to cost reductions.

<sup>5</sup> Previous studies have shown that the premium for new-technology introduction costs disappear once the designer is satisfied with the technology's performance, the technology enters full implementation, and its application has become routine. See for example Ehlen, Mark A., and Harold E. Marshall. 1996. The Economics of New-Technology Materials: A Case Study of FRP Bridge Decking. NISTIR 5864. Gaithersburg, MD: National Institute of Standards and Technology.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal was approved as it provides necessary guidance on how to address storm shelters for additions. Additions are treated as new buildings and the provisions for storm shelters need to correlate with the IBC. There was some concern that perhaps the formatting could be simplified with a more general reference to the IBC for the detailed requirements. Also, since this is applicable to all three methods potentially this could be addressed in Chapter 3.

**Assembly Action:**

**None**

**Final Action Results**

**EB68-15 Part I**

**AS**

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## Code Change No: **EB68-15 Part II**

### Original Proposal

**Section: 423, 423.1.1, 423.4, 423.4.1 (New), 423.4.2 (New)**

**Proponent:** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

**THIS IS A 2 PART CODE CHANGE PROPOSAL. BOTH PARTS WERE HEARD BY THE IEBC COMMITTEE.**

**Revise as follows:**

### SECTION 423 STORM SHELTERS

**423.1.1 Scope.** This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as ~~safe rooms or spaces~~ within buildings for the purpose of providing ~~safe refuge protection~~ from storms that produce high winds, such as tornados and hurricanes. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters.

**423.4 Group E occupancies.** In areas where the shelter design wind speed for tornados is 250 MPH in accordance with Figure 304.2(1) of ICC 500, all Group E occupancies with an ~~aggregate~~ occupant load of 50 or more shall have a storm shelter constructed in accordance with ICC 500. ~~The shelter shall be capable of housing the total occupant load of the Group E occupancy.~~

**Exceptions:**

1. Group E day care facilities.
2. Group E occupancies accessory to places of religious worship.
3. Buildings meeting the requirements for shelter design in ICC 500.

**Add new text as follows:**

**423.4.1 Required occupant capacity** The required occupant capacity of the storm shelter shall include all the buildings on the site, and shall be the greater of the following:

1. The total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy.
2. The occupant load of any indoor assembly space that is associated with the Group E occupancy.

**Exceptions:**

1. Where a new building is being added on an existing Group E site, and where the new building is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all the buildings on the site, the storm shelter shall at a minimum accommodate the required occupant capacity for the new building.
2. Where approved by the code official, the required occupant capacity of the shelter shall be permitted to be reduced by the occupant capacity of any existing storm shelters on the site.



**423.4.2 Location. Storm shelters shall be located within the buildings they serve, or shall be located where the maximum distance of travel from at least one exterior door of each building to a door of the shelter serving that building does not exceed 1000 ft. (304.8 m)**

**Reason:** This public proposal is submitted jointly by the National Institute of Standards and Technology and the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

As documented in the proposal that created the original requirements for installation of storm shelters in schools for the 2015 IBC, even schools built to modern building codes are susceptible to collapse during tornadoes. That proposal described a number of schools destroyed or severely damaged in several 2011 tornadoes in Missouri, Georgia, and Alabama. As documented in the National Institute of Standards and Technology's final report on its technical investigation of the Joplin, Missouri tornado of May 22, 2011, that one storm severely damaged or destroyed 10 of the 20 public schools in the City of Joplin, and several parochial schools.

In 2013, seven schoolchildren died in Oklahoma at the Plaza Towers Elementary School during the Newcastle-Moore tornado on May 20. They were taking refuge in the hallway of the New Main Classroom Building, in their designated tornado safety area, when the masonry hallway walls collapsed on them (see Figure 1). Several more students and teachers were injured in this and other buildings on the same campus. The Newcastle-Moore tornado also destroyed the Briarwood Elementary School, injuring several people, and collapsed the Gymnasium at Highland East Junior High School.

In recognition of the need to provide protection for schoolchildren from tornadoes, and that the existing school building stock is not capable of providing that protection, some states and communities have already begun to take action. Following the death of 8 students at Enterprise High School in a 2007 tornado, the State of Alabama enacted legislation in 2010 (Act 2010-746) requiring that all public schools incorporate tornado shelters built to ICC 500. Illinois recently became the second state to require ICC 500 tornado shelters in all new school building construction, when the Governor signed Public Act 098-0883 into law in August 2014.

Another positive trend in school shelter construction is that some of these facilities are also being made available as public shelters. For example, during the rebuilding following the 2011 tornado, the Joplin School District has been proactively outfitting its new and rebuilt schools with tornado shelters, and installing shelters at undamaged schools as well. These shelters, commonly in gymnasiums, are sized not only to handle the full daytime occupant load of the school but also the population of the surrounding neighborhoods within a quarter to half mile radius. The investment of public funds in these shelters is further leveraged to improve public safety by making them available whenever there is a threat from tornadoes, 24 hours a day and year-round. The shelter doors are automatically unlocked as soon as a tornado watch goes into effect. Tornado shelters at several school districts in Arkansas (Greenwood, Fort Smith, Alma, and Van Buren Public Schools) are also open to the public. At these shelters, the doors are automatically unlocked when the tornado siren sounds.

**Explanation of Provisions.**

- IBC Section 423.1.1 Scope. The 'safe refuge' has been revised to 'protection' so that this term will not be confused with other refuge areas already required in the code. The remainder of the change is for consistency with the revisions to the scoping language in the ICC 500-2014.
- IBC Section 423.4 Group E occupancies. The last sentence is removed and addressed in new Section 423.4.1. Section 303.1.3 states that assembly spaces associated with Group E occupancies are considered part of the Group E occupancy. However, many schools have assembly type facilities (e.g., gymnasiums with bleachers, multi-purpose rooms used for after school meetings or school registration, libraries used for school board meetings, theaters with concerts and shows open to the parents and public, gyms used for science fairs or intermural sports) that could include the public outside of normal school hours. The purpose of the storm shelter is to provide safety for the school occupants at the time of the emergency.
- IBC Section 423.4.1 Capacity. With those many uses of a school building, not all spaces will be fully occupied at the same time that all the classrooms are fully occupied. Worse case occupant load is used for all spaces for fire exiting, but total occupant load for the building is excessive for storm shelter design. The determination for the required capacity of the shelter is based on the number of staff and students that will be in the school during a typical school day or any indoor assembly space that would be fully utilized outside school hours, whichever is greater. Thus, rather than the total occupant load of the building, the capacity of the shelter is appropriately based on occupant load described in the two scenarios described in Item 1 and 2. It is not the intent of these provisions to require outdoor areas on the site (e.g., sports fields and bleachers) to be considered since that area is not a building. In new construction, a fire wall creates a separate building. If a facility adds on with a fire wall or puts another building on an existing Group E site, this is another opportunity to provide a storm shelter for that school. The designer would be responsible for determining the required storm shelter capacity for both the new building and for the total facility on the site. Depending on what type of rooms are in the new building, what proportion of the space can be used for a shelter is information that can be calculated using the provisions in ICC 500, Chapter 5. If this is a small new building, the shelter within the building will be required to at least accommodate the students and staff within that new building. If the new building is large enough that a shelter could accommodate all the students and staff on the site, the shelter will be required to accommodate the students and staff on the site. It is not the intent of the provisions to require the new building to be made bigger just to meet the shelter provisions. If there is an existing storm shelter on the site, that can be considered to reduce the capacity required for the new shelter. Due to travel distances and possible age of the existing shelter (perhaps built before ICC 500), the code official can have input into the decision.

The term site is currently defined in the codes:

**SITE.** A parcel of land bounded by a lot line or a designated portion of a public right-of-way.

- IBC Section 423.4.2 Location. The new language in IBC 423.4.2 requires the shelter to be within a building or within a distance of travel of a 1000 feet or less. Where the shelter is remote, this would be approximately a 4 minute walk at 3 mph, which is an average speed that humans tend to walk. Add that to an assumed few hundred feet travel distance to first reach the exit of the building being served, and the total travel time is 5 minutes. This is consistent with current FEMA guidance for a maximum five minute walk time to reach the tornado shelter.

Figure 1. Damage to the New Main Classroom Building at Plaza Towers Elementary School. The seven schoolchildren died in the central hallway when the classroom walls collapsed on them. An additional two staff members and one student were injured in this building.



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<sup>3</sup>See <http://www.joplinschools.org/domain/635> for more information about Joplin community safe rooms.

<sup>4</sup>See for example <http://www.greenwoodpd.org/Community/Storm-Shelters>.

#### Cost Impact:

Will increase the cost of construction

This proposal will increase the cost of construction.

The most recent information on costs is available in FEMA P-361, Design and Construction Guidance for Community Safe Rooms (Second Edition, August, 2008). All of the values described below related to cost come from that publication. It should be noted that tornado shelters designed and constructed in accordance with FEMA P-361 guidelines are called safe rooms. FEMA's safe room guidelines are similar to ICC 500, but there are some differences. Where there are differences, in all cases, FEMA requirements are more stringent than ICC 500, as documented on page 1-2 of FEMA P-361, which states "All safe room criteria in this publication meet or exceed the shelter requirements of ICC 500." Shelters built to ICC 500 would therefore cost less, but there is no data available to quantify that cost reduction.

FEMA 361 describes safe room costs for new building projects as follows. "For large new building projects, however, the percent increase in the overall project cost is quite small. For example, many safe rooms protecting 200 to 300 occupants being constructed as part of a new school have added only 1 to 2 percent to the total project cost when the safe room was included in the design process at the beginning of the project."

Based on review of 36 safe room grant applications from 2008, the average safe room cost per square foot for projects considered technically feasible and effective for providing protection was \$188/sf. From more expanded grant application data from years 2005 to 2008, the percent increase in building cost to harden a portion of a building to meet the safe room requirements ranged from 5-32 percent (cost increase per square foot of the safe room area being hardened). More information on safe room costs can be found in Chapter 2 of FEMA P-361.



Costs for storm shelters are anticipated to decrease as their use becomes more widespread. The adoption of requirements for storm shelters in tornado prone areas for Group E Occupancies and first responder facilities in the 2015 IBC will lead to installation of many more storm shelters than are currently being built. Subsequently, shelters will become less of a specialty item from a design and construction standpoint. As the market expands for specialty products needed in shelters, like tornado resistant doors, windows and shutters, economies of scale and new manufacturers joining the industry will also lead to cost reductions.

<sup>5</sup> Previous studies have shown that the premium for new-technology introduction costs disappear once the designer is satisfied with the technology's performance, the technology enters full implementation, and its application has become routine. See for example Ehlen, Mark A., and Harold E. Marshall. 1996. The Economics of New-Technology Materials: A Case Study of FRP Bridge Decking. NISTIR 5864. Gaithersburg, MD: National Institute of Standards and Technology.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was focused upon the building code and was strictly a capacity issue for storm shelters. In addition it was agreed that the scope needed to be revised to be compatible with ICC 500. The committee felt that these requirements and criteria added clarity to the application of the storm shelter provisions. In particular, the exception addressing new buildings on an existing Group E occupancy site was felt to be a necessary allowance

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB68-15 Part II**

**AS**

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<b>Code Change No: EB69-15</b>
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<b>Original Proposal</b>
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**Section: 1202.2, 1202.3**

**Proponent:** David Bonowitz, David Bonowitz, S.E., representing Existing Buildings Subcommittee, National Council of Structural Engineers Associations (dbonowitz@att.net)

**Revise as follows:**

~~1202.2~~ **1201.5 Unsafe conditions.** *No change to text.*

~~1202.3~~ **1207.1 Relocated buildings.** *No change to text.*

**Reason:** This editorial proposal reorganizes parts of Section 1202 for internal consistency within the Work Area method. Section 1202.2, regarding unsafe conditions, does not necessarily apply only to repairs. It is a more general provision that belongs in Section 1201. (In Group B, Section 1206.2 may also be removed as redundant.)

Section 1202.3, for relocated buildings, has nothing to do with repairs. For consistency within the Work Area method, it should be in its own section, the same way Sections 1204 and 1205 are separate sections for specific project types. Ideally, 1202.3 would move to a new Section 1206: Relocated Buildings, but the proposal shows it as 1207 to clarify that the intent is NOT to make this part of the existing Section 1206: Structural.

**Cost Impact:** Will not increase the cost of construction  
The proposal is entirely editorial.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The relocation of provisions out of the repair section was felt to be an appropriate clarification. The provisions on unsafe buildings and relocated buildings tend to be lost in the repair section.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB69-15**

**AS**

**EB69-15**

***Chapter 12 Historic Buildings***

*Replace Chapter 12 in its entirety with Florida-specific language to read as follows:*

**SECTION 1201**

**GENERAL**

**1201.1 Intent and purpose.** It is the intent of this chapter to provide means for occupant safety, property conservation and use of designated historic buildings while protecting those elements, spaces and features that make these buildings historically or architecturally significant

**Code Change No: EB70-15**

**Original Proposal**

**Section: 1203.5**

**Proponent:** Daniel Nichols, New York State Division of Building Standards and Codes, representing New York State Division of Building Standards and Codes (dnichols@dos.state.ny.us)

**Revise as follows:**

**1203.5 Interior finishes.** ~~The existing finishes of walls and ceilings shall be accepted when it is demonstrated that they are the historic finishes.~~

**Reason:** The definition of interior finishes includes interior floor finishes by the International Building Code. The scoping of only wall and ceiling finishes in IEBC Section 1203.5 does not allow the acceptance of historic floor finishes; such as would be found in historic homes or historic assembly occupancies. If the floor is part of the historic fabric, it should be regulated the same as the walls and ceiling interior finishes.

Just like wall and ceiling finishes, this does not provide an exception for floor finishes that are added, not back of the historic fabric of the interior, or the underlayment to removed finishes.

**Cost Impact:** Will not increase the cost of construction  
This removes a requirement to remove or modify interior floor finishes in historic buildings.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**1203.5 Interior finishes.** The existing interior finishes shall be accepted when it is demonstrated that they are the historic finishes.

**Committee Reason:** The inclusion of floors as part of the interior finishes was felt to be necessary. As currently written the section is limited to walls and ceilings. The modification further clarified the application of this section by using consistent terminology "interior" with reference to finishes.

**Assembly Action:**

**None**

**Final Action Results**

**EB70-15**

**AM**

**EB70-15**

***Chapter 12 Historic Buildings***

*Replace Chapter 12 in its entirety with Florida-specific language to read as follows:*

**SECTION 1201**

**GENERAL**

**1201.1 Intent and purpose.** It is the intent of this chapter to provide means for occupant safety, property conservation and use of designated historic buildings while protecting those elements, spaces and features that make these buildings historically or architecturally significant

**Code Change No: EB71-15**

**Original Proposal**

**Section: 1401.2**

**Proponent:** Anthony Apfelbeck, City of Altamonte Springs Building/Fire Safety, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

**Revise as follows:**

**1401.2 Applicability.** Structures existing prior to ~~[DATE TO BE INSERTED BY THE JURISDICTION. Note: it is recommended that this date coincide with the effective date of building codes within the jurisdiction]~~, *Existing buildings*, in which there is work involving *additions, alterations or changes of occupancy* shall be made to conform to the requirements of this chapter or the provisions of Chapters 5 through 13. The provisions of Sections 1401.2.1 through 1401.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, I-2, M, R and S. These provisions shall not apply to buildings with occupancies in Group H or I-1, I-3 or I-4.

**Reason:** The "Structures existing prior to [DATE TO BE INSERTED BY THE JURISDICTION. Note: it is recommended that this date coincide with the effective date of building codes within the jurisdiction]" is language that is appropriate for Chapter 1 but is not appropriate for Chapter 14. By having this language in Chapter 14, it potentially creates a conflict with the Chapter 101.4 language and that definition of Existing Buildings. At the very least, the existing language in this section can create confusion and provides no additional value. The applicability language in Chapter 14 should focus on how the provisions of this specific chapter are applied. The issue of when the code is adopted is already covered in 101.4 and the model adoption language.

This proposal eliminates the potential conflict by defaulting to the Chapter 1 language and the definition of existing building.

**Cost Impact:** Will not increase the cost of construction  
This is an editorial change and will not increase the cost of construction.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The committee agreed with the proponent's reason statement. More specifically, this proposal appropriately removes language that would better be located in an administrative section.

**Assembly Action:**

**None**

**Final Action Results**

**EB71-15**

**AS**

**Code Change No: EB73-15**

**Original Proposal**

**Section: 1401.2.3**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee(bcac@iccsafe.org)

**Revise as follows:**

**1401.2.3 Additions.** *Additions to existing buildings* shall comply with the requirements of the *International Building Code* ~~and the International Residential Code, and this code~~ for new construction. The combined height and area of the *existing building* and the new *addition* shall not exceed the height and area allowed by Chapter 5 of the *International Building Code*. Where a fire wall that complies with Section 706 of the *International Building Code* is provided between the *addition* and the *existing building*, the *addition* shall be considered a separate building.

**Reason:** For additions in this context we only need to refer back to the IBC and IRC. This code does not have provisions for new construction but is focused on existing buildings. These revisions are needed to correlate with the 2015 IBC that deleted Chapter 34 on existing buildings. This is considered a clarification of the application of the IEBC as it pertains to additions and will not change anything that is now required by the I Codes.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This proposal will not increase the cost of construction as this revision is only a clarification of the current provisions.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**1401.2.3 Additions.** *Additions to existing buildings* shall comply with the requirements of the *International Building Code* and or the *International Residential Code* for new construction. The combined height and area of the *existing building* and the new *addition* shall not exceed the height and area allowed by Chapter 5 of the *International Building Code*. Where a fire wall that complies with Section 706 of the *International Building Code* is provided between the *addition* and the *existing building*, the *addition* shall be considered a separate building.

**Committee Reason:** This proposal was seen as a necessary clean up to clarify the two codes that are intended for additions are either the IBC or IRC. The modification changed the reference to the two codes from “and” to “or.” As originally drafted it would technically require compliance with both codes. The intention was to comply with one or the other.

**Assembly Action:**

**None**

**Final Action Results**

**EB73-15**

**AM**

## Code Change No: **EB74-15**

### Original Proposal

**Section(s):** 1401.2.4

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**1401.2.4 Alterations and repairs.** An existing building or portion thereof ~~that does not comply with the requirements of this code for new construction~~ shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. ~~If, in the alteration or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33 of the International Building Code.~~

**Reason:** This section does not work within the IEBC as it did in the IBC. Generally we do not want an alteration or repair reducing the level of safety or sanitation. As currently written it says "this code" when in fact it was focused upon the IBC. Reference is not needed back to the IBC in this case. The last sentence is again sending the user of the code back to the IBC when we told them already that they could not reduce their level of safety or sanitation. As modified it will simply provide a baseline that the user of this chapter must meet. These revisions are needed to correlate with the 2015 IBC that deleted Chapter 34 on existing buildings. This is considered a clarification of the application of the IEBC as it applies to alterations and repairs and will not change anything that is now required by the I-Codes. This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This proposal will not increase the cost of construction as this revision is only a clarification of the current provisions.

### Report of Committee Action Hearings

**Committee Action:**

**Disapproved**

**Committee Reason:** The main concern with this proposal was the deletion of the last sentence. In some cases existing buildings may have more conservative construction features than new buildings. Eliminating this sentence would eliminate the ability to simply comply with the IBC.

**Assembly Action:**

**None**

### Public Comments

*Public Comment 1:*

**Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Modified by this Public Comment.**

**1401.2.4 Alterations and repairs.** An *existing building* or portion thereof shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently.

**Exception:** Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the International Building Code.



**Commenter's Reason:** The initial proposal was meant only as a clarification. Concerns were raised that by losing the last sentence the ability to allow a reduction that would meet the current building code would be lost. Therefore, the concept was borrowed from Section 701.2 which allows reductions if compliance with the IBC is achieved.

**701.2 Conformance.** An existing building or portion thereof shall not be altered such that the building becomes less safe than its existing condition

**Exception:** Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the International Building Code.

<b>Final Action Results</b>
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**EB74-15**

**AMPC1**

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## Code Change No: **EB77-15**

### Original Proposal

**Section: 1401.2.5**

**Proponent:** Edward Kulik, Chair, representing Building Code Action Committee (bcac@iccsafe.org)

**Revise as follows:**

**1401.2.5 Accessibility requirements.** Accessibility shall be provided in accordance with Section 410, ~~er~~ 705, 806, 906, 1105, 1204 and 1205.15 as applicable.

**Reason:** The current reference does not pick up the accessibility provisions for Level 2 and 3, additions or allowances for historic buildings when using the performance compliance method. The performance compliance method should be required to have the same level of access as any other alteration. Technical infeasibility and the 20% maximum rule for the accessible route costs would still be applicable.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled IBC Coordination with the New ADAAG. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification of current requirements; therefore, there is no impact on the cost.

**Staff note:** An errata was corrected to this section. The reference to Section 605 was revised to Section 705. It is shown as current code text.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was approved as it more comprehensively references all of the relevant accessibility requirements found in the IEBC. There was concern raised in the correlation with this proposal and EB33-15 going forward. EB33-15 moved all the accessibility requirements to Chapter 3.

**Assembly Action:**

**None**

### Final Action Results

**EB77-15**

**AS**

**Code Change No: EB77-15**

**Original Proposal**

**Section: 1401.6**

**Proponent:** Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

**Revise as follows:**

**1401.6 Evaluation process.** The evaluation process specified herein shall be followed in its entirety to evaluate *existing buildings* in Groups A, B, E, F, M, R, S and U. For existing buildings in Group I-2, the evaluation process specified herein shall be followed and applied to each and every individual smoke compartment. Table 1401.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code or other codes indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 1401.6.16, the score for each occupancy shall be determined, and the lower score determined for each section of the evaluation process shall apply to the entire building, or to each smoke compartment for Group I-2 occupancies.

Where the separation between the mixed occupancies qualifies for any category indicated in Section 1401.6.16, the score for each occupancy shall apply to each portion, or smoke compartment of the building based on the occupancy of the space.

**Reason:** This proposal adds "other codes" because other codes, such as the International Building Code besides the IEBC are referenced in Chapter 14.

**Cost Impact:** Will not increase the cost of construction  
Editorial

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The reference to "other codes" is necessary as there are minimum provisions that must be met from other I-Codes.

**Assembly Action:**

**None**

**Final Action Results**

**EB77-15**

**AS**

# Code Change No: **EB79-15**

## Original Proposal

### Section: 1401.6.6, 1401.6.6.1

**Proponent:** Anthony Apfelbeck, City of Altamonte Springs Buiding/Fire Safety, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

#### Revise as follows:

**1401.6.6 Vertical openings.** Evaluate the fire-resistance rating of interior exit stairways or ramps, hoistways, escalator openings, and other shaft enclosures within the building, and openings between two or more floors. Table 1401.6.6(1) contains the appropriate protection values. Multiply that value by the construction-type factor found in Table 1401.6.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 1401.7 under Safety Parameter 1401.6.6, Vertical Openings, for fire safety, means of egress, and general safety. If the structure is a one-story building or if all the unenclosed vertical openings within the building conform to the requirements of Section 713 of the *International Building Code*, enter a value of 2. The maximum positive value for this requirement (VO) shall be 2.

**1401.6.6.1 Vertical opening formula.** The following formula shall be used in computing vertical opening value.

$$VO = PV \times CF \text{ (Equation 14-5)}$$

where:

VO	=	Vertical opening value. <u>The calculated value shall not be greater than positive 2.0</u>
PV	=	Protection value from Table 1401.6.6.(1).
CF	=	Construction-type factor from Table 1401.6.6.(2).

**Reason:** The last sentence of 1401.6.6 states "The maximum positive value for this requirement shall be 2." Since Table 1401.6.6(1) has a Value of 2, this application of this maximum positive value limit can create some confusion in the proper application of this section....Is the maximum positive value applicable to PV or VO? It appears that the intent of the "The maximum positive value for this requirement shall be 2" sentence is to apply to VO since the sentence above this one is discussion the VO score. This also makes senses from a scoring standpoint. If 2 was to apply to PV, then the formula would provide 14 points for a building of VB construction and 2.4 points for one of IA construction, which would make no logical sense.

This proposal clarifies the issue by providing a footnote to VO and modifies the text in 1401.6.6 to ensure that the maximum value of 2 applies to VO.

**Cost Impact:** Will not increase the cost of construction  
Editorial change.

## Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was felt to be a necessary clarification of the vertical opening value (VO). Having a specific reference to the value in Section 1401.6.6 is helpful.

**Assembly Action:**

**None**

**Final Action Results**

**EB79-15**

**AS**

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**Code Change No: EB81-15**

**Original Proposal**

**Section: Table 1401.6.8**

**Proponent:** Anthony Apfelbeck, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

**Revise as follows:**

**TABLE 1401.6.8 (1401.6.8)  
AUTOMATIC FIRE DETECTION VALUES**

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6	— <u>NA</u>
A-2	-25	-5	0	5	9	— <u>NA</u>
A-4, B, E, S-2	-4	-2	0	4	8	— <u>NA</u>
I-2	NP	NP	NP	4	5	2

NA=Not Applicable

**Reason:** Column f in Table 1401.6.8 is the only table in Chapter 14 that is populated with a "-" line. The dash line could be read two ways for occupancies other than an I-2: 1. As a "0", potentially conflicting with "category d" or; 2. As a Not Applicable indicator. The proponent believes that the intent of "-" is a not applicable indicator. Therefore, the column is revised to show "NA" which is then supported by a note at the bottom of the table to state that "NA" means "not applicable."

**Cost Impact:** Will not increase the cost of construction  
This is an editorial change providing clarity to the code with no cost impact.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal was purely editorial and answers questions regarding the application of this table.

**Assembly Action:**

**None**

**Final Action Results**

**EB81-15**

**AS**

## Code Change No: **EB1-16**

### Original Proposal

**Section: 202 (New), 402.2 (New), 606.2.2 (New)**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Add new definition as follows:**

**DISPROPORTIONATE EARTHQUAKE DAMAGE.** A condition of earthquake-related damage where:

1. The 0.3-second spectral acceleration at the building site as estimated by the United States Geological Survey for the earthquake in question is less than 0.40 g; and
2. The vertical elements of the lateral force resisting system have suffered damage such that the lateral load-carrying capacity of any story in any horizontal direction has been reduced by more than 10 percent from its predamage condition.

**Add new text as follows:**

**402.2 Disproportionate earthquake damage** A building assigned to seismic design category D, E, or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

**606.2.2 Disproportionate earthquake damage** A building assigned to seismic design category D, E, or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

**Reason:** This proposal complements and completes the code's current intent: To identify especially vulnerable buildings at critical points in their useful lives, and to require evaluation and possibly upgrade.

Current provisions already identify substantially damaged buildings and, for those found to be especially vulnerable, the code requires a seismic upgrade. The high damage threshold (33 percent capacity loss) is appropriate, but it will only ever be reached where the earthquake shaking was also high. That is, the current provision fails to find other equally or even more vulnerable buildings in the same community that happened to be outside the area of strongest shaking.

This proposal uses an earthquake as an opportunity to find and proactively improve a community's most vulnerable buildings -- those prone to Disproportionate Earthquake Damage (DED). As proposed, DED exists where the building has significant damage in even a very small earthquake. This damage is an indicator of severe damage, possibly collapse, in a future larger event. Where DED is found, the building would be subject to evaluation with reduced loads and possibly a triggered retrofit, again with reduced loads.

The proposal is rational and measured. Note:

- It only applies in Seismic Design Category D, E, and F, so it will not have surprising effects in communities otherwise unprepared or unaware of earthquakes.
- It only applies where the measured shaking is low -- 0.3 second spectral acceleration under 0.4 g -- less than about 40 percent of design basis loads for new buildings.
- It applies where, even under these small loads, the damage is significant. The proposed capacity loss threshold of 10 percent might appear small, but in SDC D-F, with spectral acceleration less than 0.4g, any decent building really should have zero structural damage.
- Reduced loads are allowed for any DED-triggered evaluation or retrofit.
- One- and two-family dwellings are completely exempt, as they are from retrofits triggered by substantial structural damage.



**Cost Impact:** Will increase the cost of construction

For buildings in regions of high seismicity that sustain unexpected, or "disproportionate," earthquake damage, the proposed provision will increase the costs associated with post-earthquake repair. It is also likely that the upgrades so triggered will significantly REDUCE repair costs in subsequent damaging events.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**DISPROPORTIONATE EARTHQUAKE DAMAGE.** A condition of earthquake-related damage where:

1. The 0.3-second spectral acceleration at the building site as estimated by the United States Geological Survey for the earthquake in question is less than ~~0.40g~~ 40 percent of the mapped acceleration parameter SS; and
2. The vertical elements of the lateral force resisting system have suffered damage such that the lateral load-carrying capacity of any story in any horizontal direction has been reduced by more than 10 percent from its predamage condition.

**Committee Reason:** As stated in proponent's reason, this proposal complements the code's intent to identify vulnerable buildings. It is important to have an empirical method of evaluating existing structures and this provides a good mechanism for identifying those problem structures that are subject to future earthquake damage. The modification provides a more appropriate level where Seismic Design Category D buildings come into play.

**Assembly Action**

**None**

**Final Action Results**

**EB1-16**

**AM**

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## Code Change No: **EB3-16**

### Original Proposal

**Section:** [A] 101.6, 202, [BS] 404.2, [BS] 404.2.3, [BS] 404.3.1, [BS] 606.2.2, [BS] 606.2.2.3, [BS] 606.2.3.1, [BS] A101.1, [BS] A501.1, [BS] A503.1

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Delete without substitution:**

~~[BS] REHABILITATION, SEISMIC.~~ Work conducted to improve the seismic lateral force resistance of an ~~existing building~~.

**Revise as follows:**

**[BS] 404.2 Substantial structural damage to vertical elements of the lateral force-resisting system.** A building that has sustained *substantial structural damage* to the vertical elements of its lateral force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 404.2.1 through 404.2.3.

**Exceptions:**

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or ~~rehabilitated~~ retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or ~~rehabilitated~~ retrofitted for load combinations that include earthquake effects.

**[BS] 404.2.3 Extent of repair for noncompliant buildings.** If the evaluation does not establish compliance of the predamage building in accordance with Section 404.2.1, then the building shall be ~~rehabilitated~~ retrofitted to comply with applicable provisions of the *International Building Code* for load combinations that include wind or seismic loads. The wind loads ~~for the repair~~ shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by the *International Building Code*. ~~Earthquake~~ The earthquake loads ~~for this rehabilitation design~~ shall be those required for the design of the predamage building, but not less than 75 percent of those prescribed in Section 1613 of the *International Building Code*. New structural members and connections required by this ~~rehabilitation~~ retrofit design shall comply with the detailing provisions of the *International Building Code* for new buildings of similar structure, purpose and location. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake ~~rehabilitation~~ retrofit requirement.

**[BS] 404.3.1 Lateral force-resisting elements.** Regardless of the level of damage to vertical elements of the lateral force-resisting system, if *substantial structural damage* to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 404.2.1 and, if noncompliant, ~~rehabilitated~~ retrofitted in accordance with Section 404.2.3.

**Exceptions:**

1. One- and two-family dwellings need not be evaluated or ~~rehabilitated-retrofitted~~ for load combinations that include earthquake effects.
2. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or ~~rehabilitated-retrofitted~~ for load combinations that include earthquake effects.

**[BS] 606.2.2 Substantial structural damage to vertical elements of the lateral force-resisting system.** A building that has sustained *substantial structural damage* to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 606.2.2.1, and either repaired in accordance with Section 606.2.2.2 or repaired and ~~rehabilitated-retrofitted~~ in accordance with Section 606.2.2.3, depending on the results of the evaluation.

**Exceptions:**

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or ~~rehabilitated-retrofitted~~ for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or ~~rehabilitated-retrofitted~~ for load combinations that include earthquake effects.

**[BS] 606.2.2.3 Extent of repair for noncompliant buildings.** If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 606.2.2.1, then the building shall be ~~rehabilitated-retrofitted~~ to comply with the provisions of this section. The wind loads for the *repair* and ~~rehabilitation-retrofit~~ shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the *International Building Code*. The seismic loads for this ~~rehabilitation-retrofit~~ design shall be those required by the building code in effect at the time of original construction, but not less than the reduced *International Building Code*-level seismic forces.

**[BS] 606.2.3.1 Lateral force-resisting elements.** Regardless of the level of damage to gravity elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 606.2.2.1 and, if noncompliant, ~~rehabilitated-retrofitted~~ in accordance with Section 606.2.2.3.

**Exceptions:**

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or ~~rehabilitated-retrofitted~~ for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or ~~rehabilitated-retrofitted~~ for load combinations that include earthquake effects.

**[A] 101.6 Appendices.** The *code official* is authorized to require ~~rehabilitation and~~ retrofit of buildings, structures or individual structural members in accordance with the appendices of this code if such appendices have been individually adopted.

**[BS] A101.1 Purpose.** The purpose of this chapter is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on existing unreinforced masonry bearing wall buildings.

The provisions of this chapter are intended as minimum standards for structural seismic resistance, and are established primarily to reduce the risk of life loss or injury. Compliance with these provisions will not necessarily prevent loss of life or injury, or prevent earthquake damage to ~~rehabilitated~~ retrofitted buildings.

**[BS] A501.1 Purpose.** The purpose of this chapter is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on concrete buildings and concrete frame buildings.

The provisions of this chapter are intended as minimum standards for structural seismic resistance, and are established primarily to reduce the risk of life loss or injury. Compliance with the provisions in this chapter will not necessarily prevent loss of life or injury or prevent earthquake damage to the ~~rehabilitated~~ retrofitted buildings.

**[BS] A503.1 General.** This chapter provides a three-tiered procedure to evaluate the need for seismic ~~rehabilitation-retrofit~~ of existing concrete buildings. The evaluation shall show that the *existing building* is in compliance with the appropriate part of the evaluation procedure as described in Sections A505, A506 and A507, or shall be modified to conform to the respective acceptance criteria. This chapter does not preclude a building from being evaluated or modified to conform to the acceptance criteria using other well-established procedures, based on rational methods of analysis in accordance with principles of mechanics and approved by the authority having jurisdiction.

**Reason:** The proposal removes an unnecessary definition -- Seismic Rehabilitation -- and updates the related wording throughout the code from "rehabilitation" to "retrofit." (Sections where "rehabilitation" is used to mean anything other than seismic or wind upgrade remain unchanged, as does the definition of Rehabilitation as a stand-alone term.)

The term "rehabilitation" appears throughout the code, but almost always in the context of "seismic rehabilitation" -- but without the modifier "seismic." Thus, the existence of these two definitions is inconsistent with the code text and potentially confusing. The proposal removes this confusion by using the preferred term, "retrofit" wherever seismic or wind improvements are at issue.

The definition of Seismic Rehabilitation could have been changed to Seismic Retrofit, but frankly, such a definition is not needed, and in many cases the term "rehabilitation" (or, as proposed, "retrofit") is used without the extra word. Also, there is no parallel term for Wind Retrofit or Wind Rehabilitation.

Section 101.6 refers to the appendices. Appendices A and C use the term retrofit, not rehabilitation, for seismic and wind improvements respectively, so 101.6 can be revised accordingly.

The former standard for "seismic rehabilitation," ASCE 41-06, is no longer referenced by the code. Instead, the code references ASCE 41-13, which has changed its title to use "seismic retrofit."

**Cost Impact:** Will not increase the cost of construction  
The change is editorial so there are not changes to construction requirements.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** Since the term "seismic rehabilitation" is not used, it is appropriate to delete the definition from the IEBC.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB3-16**

**AS**

## Code Change No: **EB4-16**

### Original Proposal

**Section: 202, [BS] 301.1.4.1, TABLE [BS] 301.1.4.1, [BS] 301.1.4.2, TABLE [BS] 301.1.4.2**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Revise as follows:**

**[BS] SEISMIC LOADING FORCES** The loads, forces, and related requirements prescribed herein, related to the response of the structure-building to earthquake motions, to be used in the analysis and design of the structure and its components. Seismic forces are considered either full or reduced, as provided in Chapter 3.

**[BS] 301.1.4.1 Compliance with International Building Code-level full seismic forces.** Where compliance with-requires the seismic design provisions-use of the International Building Code-is required full seismic forces, the criteria shall be in accordance with one of the following:

1. One-hundred percent of the values in the International Building Code. Where the existing seismic force-resisting system is a type that can be designated as "Ordinary," values of  $R$ ,  $\Omega_0$  and  $C_d$  used for analysis in accordance with Chapter 16 of the International Building Code shall be those specified for structural systems classified as "Ordinary" in accordance with Table 12.2-1 of ASCE 7, unless it can be demonstrated that the structural system will provide performance equivalent to that of a "Detailed," "Intermediate" or "Special" system.
2. ASCE 41, using a Tier 3 procedure and the two level performance objective in Table 301.1.4.1 for the applicable risk category.

**TABLE [BS] 301.1.4.1  
PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH INTERNATIONAL BUILDING  
CODE-LEVEL-FULL SEISMIC FORCES**

**[BS] 301.1.4.2 Compliance with reduced International Building Code-level seismic forces.** Where seismic evaluation and design is permitted to meet-use reduced International Building Code-seismic force levels-forces, the criteria used shall be in accordance with one of the following:

1. The *International Building Code* using 75 percent of the prescribed forces. Values of  $R$ ,  $\Omega_0$  and  $C_d$  used for analysis shall be as specified in Section 301.1.4.1 of this code.
2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A as specified in Items 2.1 through 2.5 and subject to the limitations of the respective Appendix A chapters shall be deemed to comply with this section.
  - 2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.
  - 2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Chapter A2.

- 2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A3.
  - 2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multiunit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A4.
  - 2.5. Seismic evaluation and design of concrete buildings assigned to Risk Category I, II or III are permitted to be based on the procedures specified in Chapter A5.
3. ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category.

**TABLE [BS] 301.1.4.2  
PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES**

a. Tier 1 evaluation at the Damage Control performance level shall use the Tier 1 Life Safety checklists and Tier 1 Quick Check provisions midway between those specified for Life Safety and Immediate Occupancy performance.

**Reason:** This proposal simplifies the code's terminology, increasing usability and reducing potential errors.

The terms "International Building Code-level seismic forces" and "reduced International Building Code-level seismic forces" are unwieldy and potentially confusing. The long terms disrupt a reader's flow. The use of two long labels, one of which is entirely embedded in the other, is a recipe for confusion and error. Further, one could argue that neither term is actually technically accurate either, since the listed criteria actually allow sometimes significant departures from the IBC's prescriptive provisions (which themselves adopt ASCE 7).

Is there anything wrong with just saying "full seismic loads" or "reduced seismic loads"? That's how code users refer to the different options, and it would benefit the code to substitute these simpler terms.

The proposal also makes a coordinated change to the existing definition of "seismic loading." By itself, this term is unnecessary and could be deleted from the code entirely (it's not even used in 301.1.4, and there's no similar "wind loading" or "snow loading"). However, the definition can be put to good use to formalize the "full" and "reduced" terminology proposed here. By revising the definition as proposed, IBC provisions can now just refer to "full seismic loads" or "reduced seismic loads."

NOTE: The proposal does not show every place where one of the two current terms would need to be replaced. If the proposal is approved, this can be done by staff during the course of editing.

**Cost Impact:** Will not increase the cost of construction  
This change is editorial, so there are no changes to construction requirements.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**[BS] 606.2.2.1 Evaluation.** The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the *code official*. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the *International Building Code* for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced ~~International Building Code-level~~ seismic forces.

**[BS] 606.2.2.3 Extent of repair for noncompliant buildings.** If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 606.2.2.1, then the building shall be rehabilitated to comply with the provisions of this section. The wind loads for the *repair* and *rehabilitation* shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the *International Building Code*. The seismic loads ~~forces~~ for this *rehabilitation* design shall be those required by the building code in effect at the time of original construction, but not less than the reduced ~~International Building Code-level~~ seismic forces.

**[BS] 707.3.1 Bracing for unreinforced masonry bearing wall parapets.** Where a permit is issued for reroofing for more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist the reduced ~~International Building Code-level~~ seismic forces as specified in Section 301.1.4.2 of this code, unless an evaluation demonstrates compliance of such items.

**[BS] 807.5 Existing structural elements resisting lateral loads.** Except as permitted by Section 807.6, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the wind and seismic provisions of the *International Building Code*. Reduced ~~International Building Code-level~~ seismic forces in accordance with Section 301.1.4.2 shall be permitted.



**Exception:** Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with *International Building Code* Sections 1609 and 1613. Reduced *International Building Code* level seismic forces in accordance with Section 301.1.4.2 shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

**[BS] 907.4.2 Substantial structural alteration.** Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural *alteration* within a 5-year period, the evaluation and analysis shall demonstrate that the lateral load-resisting system of the altered building or structure complies with the *International Building Code* for wind loading and with reduced *International Building Code* level seismic forces in accordance with Section 301.1.4.2. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.

**[BS] 907.4.3 Seismic Design Category F.** Where the building is assigned to Seismic Design Category F, the evaluation and analysis shall demonstrate that the lateral load-resisting system of the altered building or structure complies with reduced *International Building Code* level seismic forces in accordance with Section 301.1.4.2 and with the wind provisions applicable to a limited structural alteration.

**[BS] 907.4.5 Wall anchors for concrete and masonry buildings.** For any building assigned to Seismic Design Category D, E or F with a structural system consisting of concrete or reinforced masonry walls with a flexible roof diaphragm and any building assigned to Seismic Design Category C, D, E or F with a structural system consisting of unreinforced masonry walls with any type of roof diaphragm, the alteration work shall include installation of wall anchors at the roof line to resist the reduced *International Building Code* level seismic forces in accordance with Section 301.1.4.2, unless an evaluation demonstrates compliance of existing wall anchorage.

**[BS] 907.4.6 Bracing for unreinforced masonry parapets.** Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category C, D, E or F shall have bracing installed as needed to resist the reduced *International Building Code* level seismic forces in accordance with Section 301.1.4.2, unless an evaluation demonstrates compliance of such items.

**[BS] 1007.3.1 Compliance with *International Building Code* level full seismic forces.** Where a building or portion thereof is subject to a *change of occupancy* that results in the building being assigned to a higher risk category based on Table 1604.5 of the *International Building Code*, the building shall comply with the requirements for *International Building Code* level full seismic forces as specified in Section 301.1.4.1 for the new risk category.

**Exceptions:**

1. Where approved by the *code official*, specific detailing provisions required for a new structure are not required to be met where it can be shown that an equivalent level of performance and seismic safety is obtained for the applicable risk category based on the provision for reduced *International Building Code* level seismic forces as specified in Section 301.1.4.2.
2. Where the area of the new occupancy with a higher hazard category is less than or equal to 10 percent of the total building floor area and the new occupancy is not classified as Risk Category IV. For the purposes of this exception, buildings occupied by two or more occupancies not included in the same risk category, shall be subject to the provisions of Section 1604.5.1 of the *International Building Code*. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.
3. Unreinforced masonry bearing wall buildings in Risk Category III when assigned to Seismic Design Category A or B shall be allowed to be strengthened to meet the requirements of Appendix Chapter A1 of this code [Guidelines for the Seismic Retrofit of Existing Buildings (GSREB)].

**[BS] 1103.3 Lateral force-resisting system.** The lateral force-resisting system of *existing buildings* to which additions are made shall comply with Sections 1103.3.1, 1103.3.2 and 1103.3.3.

**Exceptions:**

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes where the *existing building* and the *addition* comply with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.
2. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction. For purposes of calculating demand capacity ratios, the demand shall consider applicable load combinations involving *International Building Code* level full seismic forces in accordance with Section 301.1.4.1.

**[BS] 1103.3.1 Vertical addition.** Any element of the lateral force-resisting system of an *existing building* subjected to an increase in vertical or lateral loads from the vertical *addition* shall comply with the *International Building Code* wind provisions and the *International Building Code* level full seismic forces specified in Section 301.1.4.1 of this code.

**[BS] 1103.3.2 Horizontal addition.** Where horizontal *additions* are structurally connected to an existing structure, all lateral force-resisting elements of the existing structure affected by such *addition* shall comply with the *International Building Code* wind provisions and the ~~IBC level full~~ seismic forces ~~specified in Section 301.1.4.1 of this code~~.

**Committee Reason:** Agreement with proponent's reason that indicates this change simplifies the terminology in the IEBC, increasing usability and reducing potential errors. It removes unwieldy language and substitutes clearer, more concise language. The modification takes care of coordinating this terminology change throughout the IEBC.

**Assembly Action**

**None**

<b>Final Action Results</b>
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**EB4-16**

**AM**

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**Code Change No: EB6-16**

**Original Proposal**

**Section: 202 (New), [BS] 907.4.2**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Add new definition as follows:**

**SUBSTANTIAL STRUCTURAL ALTERATION.** An alteration in which the gravity load-carrying structural elements altered within a 5-year period support more than 30 percent of the total floor and roof area of the building or structure. The areas to be counted toward the 30 percent shall include mezzanines, penthouses, and in-filled courts and shafts tributary to the altered structural elements.

**Revise as follows:**

~~**[BS] 907.4.2 Substantial structural alteration.** Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in work involves a substantial structural alteration within a 5-year period alteration, the evaluation and analysis shall demonstrate that the lateral load-resisting system of the altered building or structure complies with the *International Building Code* for wind loading and with reduced *International Building Code*-level seismic forces in accordance with Section 301.1.4.2. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.~~

**Reason:** The proposal takes existing wording from Section 907.4.2 that is already written as a de facto definition and makes into an actual definition in Chapter 2. This simplifies Section 907.4.2 and improves the consistency of the code with respect to similar concepts and definitions. Section 907.4.4, which references the term already, need not be revised. In making the change, some redundant commentary-like text (about tributary areas and listing types of gravity load carrying elements) is removed for clarity, with no loss of substance.

**Cost Impact:** Will not increase the cost of construction  
The proposal is an editorial clarification so there are not changes in construction requirements.

**Report of Committee Action Hearings**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The committee agreed that it is preferable to provide a definition of "substantial structural alteration" rather than rely on the de facto definition currently in Section 907.4.2.

**Assembly Action:** **None**

**Final Action Results**

**EB6-16**

**AS**

## Code Change No: **EB7-16**

### Original Proposal

#### Section: 301.1

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

#### Revise as follows:

**301.1 General.** The *repair, alteration, change of occupancy, addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an *existing building* subject to *repair, alteration, change of occupancy, addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

~~**Exception:** Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.4. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations of existing buildings in flood hazard areas* shall comply with Section 701.3.~~

**Exception:** Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code. New structural members added as part of the *alteration* shall comply with the *International Building Code*. This exception shall not apply to alterations that constitute substantial improvement in *flood hazard areas*, which shall comply with Section 701.3. This exception shall not apply to the structural provisions of Chapter 4 or to the structural provisions of Sections 707, 807, and 907.

**Reason:** This proposal retains the exception that allows the code official to waive certain architectural and other requirements that the IBC would normally trigger in alteration projects. It removes that exception, however, regarding structural provisions.

The current exception already does not apply to alterations in flood hazard areas (which sometimes trigger structural improvements) or to substantial structural alterations. So the proposal does not change those cases at all.

Since the existing structural provisions for alterations already allow reduced loads and alternative criteria in many cases, and already trigger structural improvements only in rare and severe cases, the proposed change to this exception should have little impact except to affirm that structural safety is fundamental to the code's intent.

By rolling back the blanket waiver for structural safety issues, the proposal helps code officials enforce the code as intended. It prevents the IBC's basic structural requirements from being undermined by a permit applicant's pressure to receive a discretionary waiver.

As a secondary matter, it is worth noting that the existing exception is unclear. It refers to "laws in existence at the time the building ... was built." But if the intent is to waive requirements triggered by alterations, this language ignores, or forgets, the fact that older codes for a long time had alteration provisions that triggered structural upgrade -- often with requirements more onerous than those in the current IBC. So does a permit applicant claiming compliance with the "laws in existence" a generation ago also intend to comply with those outdated triggers? This proposal removes that potential confusion.

**Cost Impact:** Will not increase the cost of construction

This proposal will not increase the cost of construction, but it could, hypothetically, limit the cases in which the code official could effectively reduce the cost of construction by waiving structural safety requirements. In practice, no increase in the cost of construction should be expected, however, since the proposal does not change any of the code's provisions, but only changes what was a discretionary waiver.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** For consistency with Group A efforts toward converting IEBC to one compliance method. This is a step towards that convergence.

**Assembly Action:**

**None**

**Final Action Results**

**EB7-16**

**AS**

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**Code Change No: EB8-16**

**Original Proposal**

**Section: A501, A502, A503, A504, A505, A506, A507, [BS] 301.1.4.2.**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 301.1.4.2 Compliance with reduced International Building Code-level seismic forces.** Where seismic evaluation and design is permitted to meet reduced *International Building Code* seismic force levels, the criteria used shall be in accordance with one of the following:

1. The *International Building Code* using 75 percent of the prescribed forces. Values of  $R$ ,  $\Omega_0$  and  $C_d$  used for analysis shall be as specified in Section 301.1.4.1 of this code.
2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A as specified in Items 2.1 through ~~2.5~~2.4 and subject to the limitations of the respective Appendix A chapters shall be deemed to comply with this section.
  - 2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.
  - 2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Chapter A2.
  - 2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A3.
  - 2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multiunit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A4.
  - ~~2.5. Seismic evaluation and design of concrete buildings assigned to Risk Category I, II or III are permitted to be based on the procedures specified in Chapter A5.~~
3. ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category.

**APPENDIX A Guidelines for the Seismic Retrofit of Existing Buildings**

**Delete without substitution:**

~~CHAPTER PART A5—EARTHQUAKE HAZARD REDUCTION IN EXISTING CONCRETE BUILDINGS~~

~~SECTION A501—  
PURPOSE~~

~~SECTION A502—  
SCOPE~~

**~~SECTION A503-~~  
~~GENERAL REQUIREMENTS~~**

**~~SECTION A504-~~  
~~SITE GROUND MOTION~~**

**~~SECTION A505-~~  
~~TIER 1 ANALYSIS PROCEDURE~~**

**~~SECTION A506-~~  
~~TIER 2 ANALYSIS PROCEDURE~~**

**~~SECTION A507-~~  
~~TIER 3 ANALYSIS PROCEDURE~~**

**Reason:** This proposal deletes Chapter A5 from Appendix A. With recent revisions to both Chapter A5 and ASCE 41, this appendix chapter is no longer needed and provides no benefit relative to the procedures in ASCE 41 that are already allowed by the IEBC.

**Cost Impact:** Will not increase the cost of construction. This is redundancy with reference standard, so there will be no change in construction.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The deletion of Appendix Chapter A5 is appropriate since the referenced standard, ASCE 41, has comparable requirements for existing concrete buildings.

**Assembly Action:**

**None**

**Final Action Results**

**EB8-16**

**AS**

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**Code Change No: EB9-16**

**Original Proposal**

**Section: [BS] 301.1.4.2**

**Proponent:** Jennifer Goupil, AMERICAN SOCIETY OF CIVIL ENGINEERS, representing SELF (jgoupil@asce.org)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Revise as follows:**

**[BS] 301.1.4.2 Compliance with reduced International Building Code-level seismic forces.** Where seismic evaluation and design is permitted to meet reduced *International Building Code* seismic force levels, the criteria used shall be in accordance with one of the following:

1. The *International Building Code* using 75 percent of the prescribed forces. Values of  $R$ ,  $\Omega_o$  and  $C_d$  used for analysis shall be as specified in Section 301.1.4.1 of this code.
2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A as specified in Items 2.1 through 2.5 and subject to the limitations of the respective Appendix A chapters shall be deemed to comply with this section.
  - 2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.
  - 2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Chapter A2.
  - 2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A3.
  - 2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multiunit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A4.
  - 2.5. Seismic evaluation and design of concrete buildings assigned to Risk Category I, II or III are permitted to be based on the procedures specified in Chapter A5.
3. ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category.

**TABLE [BS] 301.1.4.2  
PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES**

RISK CATEGORY (Based on IBC Table 1604.5)	STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-1E EARTHQUAKE HAZARD LEVEL	STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-2E EARTHQUAKE HAZARD LEVEL
I	Life Safety (S-3). <u>See Note a</u>	<u>Collapse Prevention (S-5)</u>
II	Life Safety (S-3). <u>See Note a</u>	<u>Collapse Prevention (S-5)</u>
III	Damage Control (S-2). <u>See Note a</u>	<u>Limited Safety (S-4). See Note b</u>
IV	Immediate Occupancy (S-1)	<u>Life Safety (S-3). See Note c</u>

a. Tier 1 evaluation at the Damage Control performance level shall use the Tier 1 Life Safety checklists and Tier 1 Quick Check

~~provisions midway between those specified for Life Safety and Immediate Occupancy performance.~~

a. For Risk Category I, II, III buildings, the Tier 1 and Tier 2 procedures are not evaluated for the BSE-1E earthquake hazard level.

b. For Risk Category III, the Tier 1 screening checklists shall be based on the Collapse Prevention, except that checklist statements using the Quick Check provisions shall be based on  $M_S$  -factors based on a linear interpolation midway between Collapse Prevention and Life Safety.

c. For Risk Category IV, the Tier 1 screening checklists shall be based on the Collapse Prevention, except that checklist statements using the Quick Check provisions shall be based on  $M_S$  -factors for Life Safety.

**Reason:** This proposal updates the IEBC to be consistent with the revised performance objective definitions and terminology used in ASCE 41-17. For "reduced IBC-level seismic forces" the 2015 IEBC referenced the "Basic Performance Objective for Existing Buildings" (BPOE) using the BSE-1E level hazard and correlating performance levels by Risk Category. ASCE 41-17 has eliminated the BSE-1E level check for Tier 1 and 2 evaluations of buildings assigned to Risk Category I, II, and III, and instead defines the BPOE using the BSE-2E hazard level only. The Tier 1 and 2 procedures have been revised accordingly so the text in 2015 IEBC Table 301.1.4.2 is now inconsistent with ASCE 41-17.

The changes to ASCE 41-17 addressed a concern that the BSE-1E hazard level is too low to provide a "deemed to comply" performance with the commensurate performance in the BSE-2E, in particular in the central and eastern United States. Thus, the Tier 1 and Tier 2 evaluation for Risk Category I and II structures was changed consider the Collapse Prevention at BSE-2E instead of Life Safety at BSE-1E. A similar change was made for Risk Category III buildings. If a building achieves the required performance level for the BSE-2E hazard, then in accordance with ASCE 41-17, the building is deemed to comply with the associated performance level at the BSE-1E level. Risk Category IV structures require a dual-level check in Tier 1 and Tier 2 because it cannot be demonstrated that Immediate Occupancy in the BSE-1E will always provide Life Safety in the BSE-2E or vice versa. In ASCE 41-17, structural Life Safety is a margin against collapse, while Immediate Occupancy implies that there is a limitation of damage to the structural system such that the building would likely be able to be occupied following BSE-2E seismic hazard shaking intensity. The discrepancy between the BSE-1E and BSE-2E hazard intensity levels in many areas of the country is significant, so satisfying Immediate Occupancy in the BSE-1E may not provide sufficient reserve capacity in the structure to provide Life Safety structural performance in the BSE-2E hazard intensity.

The performance objectives for Tier 3 evaluations were not changed in ASCE 41-17, since ASCE 41-13 already required a two-level performance objective check for buildings in all Risk Categories.

The proposed revisions to the IEBC are intended to keep the IEBC as consistent with the intent of ASCE 41-17 as the 2015 IEBC was with ASCE 41-13. Achieving this consistency involves adding a two-level check for Tier 3 evaluations and for Tier 1 and 2 for Risk Category IV buildings. Requiring the two-level check will result in building performance more consistent and reliable across the country and more consistent among the Tier 1, 2 and 3 procedures. This revision could potentially involve more analysis work on the part of the evaluating engineer, but in many cases it is relatively easy to determine which of the two performance objectives will govern the analysis, and the difference between the two analysis levels is most often simple numerical scaling.

**Cost Impact:** Will not increase the cost of construction

The IEBC revisions and related revisions in ASCE 41-17 will not have a significant impact on construction cost except when compared to seismic evaluation and retrofit in the central and eastern United States performed using ASCE 41-13 as referenced in the 2015 IEBC. However, due to the reduction in seismic hazard for the BSE-1E in ASCE 41-13 compared to the similar provisions in the previous editions of ASCE 31 and 41 (as referenced in the 2012 IEBC), the cost of construction using the 2018 IEBC with the proposed modifications is expected to be comparable to the 2012 IEBC.

ASCE 41 *Seismic Evaluation and Retrofit of Existing Buildings* will be updated from the 2013 edition as an Administrative Update to the 2018 I-Codes. The document designated ASCE 41 -17 *Seismic Evaluation and Retrofit of Existing Buildings* is expected to be completed, published, and available for purchase prior to December 2017 per ICC CP28.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

#### TABLE [BS] 301.1.4.2 PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES

a. For Risk Category I, II, and III buildings, the Tier 1 and Tier 2 procedures are ~~need~~ not evaluated ~~be considered~~ for the BSE-1E earthquake hazard level.

b. For Risk Category III, the Tier 1 screening checklists shall be based on ~~the~~ Collapse Prevention, except that checklist statements using the Quick Check provisions shall be based on  $M_S$  -factors ~~based on a linear interpolation midway between that~~ are the average of the values for Collapse Prevention and Life Safety.

c. For Risk Category IV, the Tier 1 screening checklists shall be based on ~~the~~ Collapse Prevention, except that checklist statements using the Quick Check provisions shall be based on  $M_S$  -factors for Life Safety.

**Committee Reason:** This proposal adds structural performance level requirements to the IEBC that are in line with the latest edition of ASCE 41. The modification uses clearer language in the new table notes.

**Assembly Action**

**Final Action Results**

**None**

**EB9-16**

**AM**

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## Code Change No: **EB12-16**

### Original Proposal

**Section: 303 (New), 303.1 (New), [BS] 402.3.1, [BS] 403.3.1, [BS] 807.3**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Add new text as follows:**

### SECTION 303 DESIGN LOADS

**303.1 Live loads.** Where new live loads are higher than previously approved design live loads, the new design live loads shall be based on Section 1607 of the *International Building Code*. Unless otherwise required, design live loads for other areas shall be permitted to use previously approved design live loads. Where a previously approved design live load is used and is less than that specified by Section 1607 of the *International Building Code*, the area with the nonconforming live load shall be posted with placards of approved design indicating the approved live load.

**Delete without substitution:**

~~**[BS] 402.3.1 Design live load.** Where the addition does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the addition. If the approved live load is less than that required by Section 1607 of the *International Building Code*, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the addition does result in increased design live load, the live load required by Section 1607 of the *International Building Code* shall be used.~~

~~**[BS] 403.3.1 Design live load.** Where the alteration does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the alteration. If the approved live load is less than that required by Section 1607 of the *International Building Code*, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the alteration does result in increased design live load, the live load required by Section 1607 of the *International Building Code* shall be used.~~

~~**[BS] 807.3 Minimum design loads.** The minimum design loads on existing elements of a structure that do not support additional loads as a result of an alteration shall be the loads applicable at the time the building was constructed.~~

**Reason:** This proposal reconciles differences between similar provisions in the Prescriptive and Work Area methods and moves the reconciled provision to Chapter 3.

The proposal replaces three sections, generally implementing the preferred and more complete provisions from Sections 402.3.1 and 403.3.1 (and 404.3, made moot by Group A EB 10). Because the reconciled provision applies to multiple methods and to multiple project types, and because it contains no project-specific triggers or exceptions, it is suitable for Chapter 3. Notes:

- The brief text in current 807.3 appears to cover all load types but is really only about live loads. Snow, wind, and earthquake loads are all addressed more specifically by other provisions, especially in the current Work Area method to which 807.3 applies. So this proposal represents no loss of substance relative to current 807.3.

- The placard requirement from current 402.3.1 and 403.3.1 is retained.
- The important concept of "previously approved design live load" from current 402.3.1 and 403.3.1 is retained. This ensures that the comparison is made between the new intended design and the original design (for which the design live loads might have been less than what Table 1607.1 now requires for new buildings).
- In the second sentence, "Unless otherwise required" is necessary because the Change of Occupancy provisions actually do not allow the use of original live loads in the CoO area. However, in areas adjacent to and possibly affected by a CoO, this general provision may still be reasonably used.

(In concept, the seismic provisions moved in Group A to a new Section 303 should be made a subsection of this new more general Section 303, but we leave that to ICC's staff and code correlating committees to do.)

**Cost Impact:** Will not increase the cost of construction Reorganization and consolidation only. The cost of placarding might increase, but it is not included as part of the cost of construction.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Modified**

**Modify as follows:**

~~**303.1 Live loads.** Where new live loads are higher than previously approved design live loads, the new design live loads shall be based on Section 1607 of the International Building Code. Unless otherwise required, design live loads for other areas shall be permitted to use previously approved design live loads. Where a previously approved design live load is used and is less than that specified by Section 1607 of the International Building Code, the area with the nonconforming live load shall be posted with placards of approved design indicating the approved live load.~~

**303.1 Live Loads** Where an *addition* or *alteration* does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the *addition* or *alteration*. If the *approved* live load is less than that required by Section 1607 of the *International Building Code*, the area designated for the nonconforming live load shall be posted with placards of *approved* design indicating the *approved* live load. Where the *addition* or *alteration* does result in increased design live load, the live load required by Section 1607 of the *International Building Code* shall be used.

**Committee Reason:** This code change removes redundant provisions on live loads and consolidates them in Chapter 3. The modification further clarifies the live load provision, incorporating current wording.

**Assembly Action**

**None**

<b>Final Action Results</b>
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**EB12-16**

**AM**

## Code Change No: **EB13-16**

### Original Proposal

**Section(s):** 303 (New), 303.1 (New)

**Proponent:** Gwenyth Searer, Wiss, Janney, Elstner Associates, Inc.

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Add new text as follows:**

### SECTION 303 IN-SITU LOAD TESTS

**303.1 General.** In-situ load tests shall be conducted in accordance with Section 1708 of the *International Building Code*.

**Reason:** The in-situ load test provisions in the IBC are used for both new and existing buildings. The IEBC does not currently contain provisions for load tests of existing buildings but needs to, as in-situ load testing is a valid means of assessing an existing structure's or an existing component's strength. This reference to the IBC incorporates the test provisions in the IBC without requiring duplication of the provision. This is a cleaner solution than trying to copy the text from the IBC and then modifying it to fit within the structure of the IEBC, which has its own requirements for analysis as well as repair and hazard mitigation.

**Cost Impact:** Will not increase the cost of construction

This proposal has no cost implications, as the provisions in IBC Section 1708 were already intended to apply to both new and existing buildings. This proposal simply clarifies that the in-situ load test provisions of IBC Section 1708 can still be used to assess existing structures.

### Report of Committee Action Hearings

**Committee Action:**

**As Submitted**

**Committee Reason:** The committee agreed that the proposal corrects an omission by adding a necessary reference to IBC in-situ testing criteria.

**Assembly Action:**

**None**

### Public Comments

*Public Comment 1:*

**David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net) requests Approve as Modified by this Public Comment.**

**Modify as follows:**

**303.1 General.** In-situ ~~Where used, in-situ~~ load tests shall be conducted in accordance with Section 1708 of the *International Building Code*.

**Commenter's Reason:** This comment offers a (perhaps overly cautious) clarification to the approved proposal. In order to avoid an incorrect inference that all existing building projects require in-situ load tests, we propose adding the two words as shown.

**Final Action Results**

**EB13-16**

**AMPC1**

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**Code Change No: EB14-16**

**Original Proposal**

**Section: 401.3, [BS] 606.1**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

~~401.3~~ **302.2 Dangerous conditions.** The ~~building code~~ official shall have the authority to require the elimination of conditions deemed *dangerous*.

**[BS] 606.1 General.** Structural repairs shall be in compliance with this section and Section 601.2. ~~Regardless of the extent of structural or nonstructural damage, dangerous conditions shall be eliminated.~~ Regardless of the scope of *repair*, new structural members and connections used for *repair* or *rehabilitation* shall comply with the detailing provisions of the *International Building Code* for new buildings of similar structure, purpose and location.

**Reason:** This proposal relocates the key provision for Dangerous buildings.  
Current section 401.3 says really all that needs to be said about Dangerous conditions. The provision applies to all project types and methods; therefore, to the extent that it even needs to be stated, it belongs in Chapter 3. (The change to "code official" is consistent with Group A EB 2).

In current section 606.1, the second sentence, about dangerous conditions, would be covered by moving current 401.3 to proposed 302.2. The portion about the extent of damage is immaterial; dangerous conditions do not necessarily require damage (they can be due to overload, under-design, or construction defect) and they are not only related to Repairs. Thus, this provision belongs in Chapter 3 where it will apply to all project types.

**Cost Impact:** Will not increase the cost of construction  
This proposal is editorial, therefore there is not change in construction requirements.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This change relocates the provision on dangerous condition to Chapter 3, providing a clear path for addressing dangerous conditions.

**Assembly Action:**

**None**

**Final Action Results**

**EB14-16**

**AS**

## Code Change No: **EB15-16**

### Original Proposal

**Section:** [BS] 1103.2, [BS] 1103.4, [BS] 402.3.

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 402.3 Existing structural elements carrying gravity load.** Any existing gravity load-carrying structural element for which an *addition* and its related alterations cause an increase in design ~~gravity dead, live, and/or snow load, including snow drift effects,~~ of more than 5 percent shall be ~~strengthened, supplemented, replaced or otherwise altered~~ as needed to carry the ~~increased gravity load loads~~ required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased ~~as part of the addition and its related alterations~~ shall be considered an altered element subject to the requirements of Section 403.3. Any existing element that will form part of the lateral load path for any part of the *addition* shall be considered an existing lateral load-carrying structural element subject to the requirements of Section 402.4.

**Exception:** Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.

**[BS] 1103.2 Additional gravity loads.** ~~Existing~~ Any existing gravity load-carrying structural element ~~supporting element~~ for which an addition and its related alterations cause an increase in design dead, live, and/or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity load loads required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the addition and its related alterations shall be considered an altered element subject to the requirements of Section 807.4. Any existing element that will form part of the lateral load path for any ~~additional gravity loads as a result part of additions~~ the addition shall ~~comply with~~ be considered an existing lateral load-carrying structural element subject to the ~~*International Building Code*~~ requirements of Section 1103.3.

**Exceptions ~~Exception:~~**

- ~~1. Structural elements whose stress is not increased by more than 5 percent.~~
2. Buildings of Group R occupancy with ~~no~~ not more than five dwelling units or sleeping units used solely for residential purposes where the *existing building* and the *addition together* comply with the conventional ~~lightframe~~ light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.

**Delete without substitution:**

**[BS] 1103.4 Snow drift loads.** Any structural element of an *existing building* subjected to additional loads from the effects of snow drift as a result of an *addition* shall comply with the *International Building Code*.

**Exceptions:**

1. ~~Structural elements whose stress is not increased by more than 5 percent.~~
2. ~~Buildings of Group R occupancy with no more than five dwelling units or sleeping units used solely for residential purposes where the *existing building* and the *addition* comply with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.~~

**Reason:** The basic intent of these three sections is the same: Gravity load increases of 5% or more, as well as capacity reductions, require redesign. However, the three sections differ in their wording, in their explicit inclusion of snow drift effects, and in their exceptions.

This proposal reconciles the Prescriptive and Work Area methods and adds consistency to the code's language. In general, the structure, logic, and completeness of Section 402.3 is preferred. However, the light-frame exceptions of 1103.2 and 1103.4, as well as the explicit consideration of snow drift effects in 1103.4 are retained and added to 402.3 for consistency. Thus, the changes include:

- Replacing the 5% exception in 1103.2 and 1103.4 with the structure of the 5% rule from 402.3.
- Adding the light frame exception from 1103.2 and 1103.4 to 402.3.
- Combining the snow drift provision of 1103.4 with the more general D+L provisions in 1103.2 and 402.3.
- Rewording, with editorial revisions, for clarity and consistency.

**Cost Impact:** Will not increase the cost of construction  
Could REDUCE the cost of construction, since an exception is added to the Prescriptive method.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The committee agreed that this proposal to reconcile wording in similar sections of the code is a clarification of the current intent of the IEBC.

**Assembly Action:**

**None**

**Final Action Results**

**EB15-16**

**AS**

## Code Change No: **EB17-16**

### Original Proposal

**Section:** [BS] 1103.3, [BS] 1103.3.1, [BS] 1103.3.2, [BS] 1103.3.3, [BS] 402.4

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Revise as follows:**

**[BS] 402.4 Existing structural elements carrying lateral load.** Where the *addition* is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the *addition* is not structurally independent of the existing structure, the existing structure and its *addition* acting together as a single structure shall ~~be shown to meet the requirements of Sections 1609 and 1613 of the *International Building Code*. For purposes of this section, compliance with ASCE 41, using *International Building Code*-level seismic forces, a Tier 3 procedure and the two-level performance objective in Table 301.1.4.1 for the applicable risk category, shall be deemed to meet the requirements of Section 1613.~~

**Exception: Exceptions:**

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the *addition* considered is not more than 10 percent greater than its demand-capacity ratio with the *addition* ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the *International Building Code*. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of *additions* and *alterations* since original construction.
2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the *existing building* and the *addition* together comply with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.

**[BS] 1103.3 Lateral force-resisting system.** ~~The~~Where the addition is structurally independent of the existing structure, existing lateral force-resisting system-load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of ~~existing buildings to which additions are made~~ the existing structure, the existing structure and its addition acting together as a single structure shall ~~comply with~~ meet the requirements of Sections ~~1103.3.1, 1103.3.2~~ 1609 and ~~1103.3.3~~ 1613 of the *International Building Code* using *International Building Code*-level seismic forces.

**Exceptions:**

1. Buildings of Group R occupancy with ~~not~~ more than five dwelling or sleeping units used solely for residential purposes where the *existing building* and the *addition* together comply with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.



- ~~2. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction. For purposes of calculating demand capacity ratios, the demand shall consider applicable load combinations involving *International Building Code* level seismic forces in accordance with Section 301.1.4.1.~~
2. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the *International Building Code*. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of additions and alterations since original construction.

**Delete without substitution:**

~~**[BS] 1103.3.1 Vertical addition.** Any element of the lateral force-resisting system of an *existing building* subjected to an increase in vertical or lateral loads from the vertical *addition* shall comply with the *International Building Code* wind provisions and the *International Building Code* level seismic forces specified in Section 301.1.4.1 of this code.~~

~~**[BS] 1103.3.2 Horizontal addition.** Where horizontal *additions* are structurally connected to an existing structure, all lateral force-resisting elements of the existing structure affected by such *addition* shall comply with the *International Building Code* wind provisions and the IBC level seismic forces specified in Section 301.1.4.1 of this code.~~

~~**[BS] 1103.3.3 Voluntary addition of structural elements to improve the lateral force-resisting system.** Voluntary addition of structural elements to improve the lateral force-resisting system of an *existing building* shall comply with Section 807.6.~~

**Reason:** This proposal makes corresponding sections of the Prescriptive and Work Area methods identical. The only substantive difference between the current provisions is that the current WAM provision includes the light-frame exception, so this is added to the Prescriptive provision. Otherwise, all of the revisions shown are editorial:  
402.4:

- The logic and construction of 402.4 is more technically correct and is consistent with that used for alterations. It is therefore preferred to the multi-part structure in 1103.3.1 through 3.
- Use the simpler consistent terminology to refer to IBC-level forces.
- Add the light-frame exception from 1103.3.

1103.3:

- Replace this brief introductory provision with the preferred version from 402.4.
- In Exception 2, re-order the sentence to match 402.4.

1103.3.1 and 1103.3.2:

- Replace with the preferred construction proposed for 1103.3. Rather than "vertical" or "horizontal," the important distinction is between those additions that are structurally independent of the existing structure and those that are not.

1103.3.3:

- Delete. This short provision is redundant (it merely points unnecessarily to 807.6) and in any case does not belong in Chapter 11. The "addition of structural elements" is not an Addition.

**Cost Impact:** Will not increase the cost of construction  
Could REDUCE the cost of construction through a new exception to the Prescriptive method.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This code change correlates the IEBC work area method provisions with those of the prescriptive method that apply to additions.

**Assembly Action:**

**None**

**Final Action Results**

**EB17-16**

**AS**

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## Code Change No: **EB18-16**

### Original Proposal

**Section:** [BS] 403.3, [BS] 707.2, [BS] 807.4

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 403.3 Existing structural elements carrying gravity load.** Any existing gravity load-carrying structural element for which an *alteration* causes an increase in design ~~gravity dead, live, and/or snow load, including snow drift effects,~~ of more than 5 percent shall be ~~strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load loads~~ required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the *alteration* shall be shown to have the capacity to resist the applicable design ~~gravity dead, live, and/or snow loads, including snow drift effects,~~ required by the *International Building Code* for new structures.

**Exceptions:**

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m<sup>2</sup>) or less over an existing single layer of roof covering.

**Delete and substitute as follows:**

**[BS] 707.2 Addition or replacement of roofing or replacement of equipment.** ~~Where addition or replacement of roofing or replacement of equipment results in additional dead loads, structural components supporting such reroofing or equipment shall comply with the gravity load requirements of the International Building Code.~~

**Exceptions:**

1. ~~Structural elements where the additional dead load from the roofing or equipment does not increase the force in the element by more than 5 percent.~~
2. ~~Buildings constructed in accordance with the International Residential Code or the conventional lightframe construction methods of the International Building Code and where the dead load from the roofing or equipment is not increased by more than 5 percent.~~
3. ~~Addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m<sup>2</sup>) or less over an existing, single layer of roof covering.~~

Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live, and/or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *International Building Code* for new structures.

**Exceptions:**

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m<sup>2</sup>) or less over an existing single layer of roof covering.

**[BS] 807.4 Existing structural elements carrying gravity loads.** ~~Alterations shall not reduce the capacity of existing gravity load-carrying structural elements unless it is demonstrated that the elements have the capacity to carry the applicable design gravity loads required by the *International Building Code*. Existing structural elements supporting any additional gravity loads as a result of the alterations, including the effects of snow drift, shall comply with the *International Building Code*.~~

**Exceptions:**

- ~~1. Structural elements whose stress is not increased by more than 5 percent.~~
- ~~2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and its alteration comply with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.~~

Any existing gravity load-carrying structural element for which an alteration causes an increase in design gravity dead, live, and/or snow load, including snow drift effects, of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the gravity loads required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design gravity dead, live, and/or snow loads, including snow drift effects, required by the *International Building Code* for new structures.

**Exceptions:**

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m<sup>2</sup>) or less over an existing single layer of roof covering.

**Reason:** The basic intent of these three sections is the same: Gravity load increases of 5% or more, as well as capacity reductions, require redesign. However, the three sections differ in their wording, in their explicit inclusion of snow drift effects, and in their exceptions.

This proposal reconciles the Prescriptive and Work Area methods and adds consistency to the WAM's Level 1 and Level 2 provisions. In general, the structure, logic, and completeness of Section 403.3 is preferred. However, the exceptions of 707.2 and 807.4, as well as the explicit consideration of snow drift effects in 807.4 are retained and added to 403.3 for consistency. Thus, the changes include:

- Replacing the 5% exception in 707.2 and 807.4 with the structure of the 5% rule from 403.3.
- Adding the light frame exception from 807.4 to 403.3 and modifying the corresponding exception in 707.2 to match.

- Adding the reroof exception from 707.2 to both 807.4 and 403.3.
- Rewording, with editorial revisions, for clarity and consistency.

Thus, 403.3 and 807.4 become identical. Section 707.2 is nearly identical, but it does not require the second sentence because any decrease in member capacity would not be allowed as a Level 1 alteration.

Since Level 2 Alts must comply with both Chapter 8 and Chapter 7, there will be some duplication between 707.2 and 807.4 (for example, 807.4 does not really need the reroof exception since it is already in 707.2), but no more than there is already, and with this change, the matching language ensures no conflict.

**Cost Impact:** Will increase the cost of construction

The proposed change could increase OR DECREASE the cost of construction. By reconciling the two methods, a common-sense snow provision has been added to the Prescriptive method, but two exceptions have been added as well.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**[BS] 807.4 Existing structural elements carrying gravity loads.** Any existing gravity load-carrying structural element for which an alteration causes an increase in design-gravity dead, live, and/or snow load, including snow drift effects, of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the gravity loads required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design-gravity dead, live, and/or snow loads, including snow drift effects, required by the *International Building Code* for new structures.

**Exceptions:**

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m<sup>2</sup>) or less over an existing single layer of roof covering.

**Committee Reason:** This proposal provides correlation between the prescriptive and work area methods, improving upon the current wording so that the requirements are more understandable. The modification corrects mistakes in the original proposal.

**Assembly Action**

**None**

<b>Final Action Results</b>
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**EB18-16**

**AM**

## Code Change No: **EB20-16**

### Original Proposal

#### Section: [BS] 403.4, [BS] 807.5

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

#### Revise as follows:

**[BS] 403.4 Existing structural elements carrying lateral load.** Except as permitted by Section ~~403.5~~ ~~403.9~~, where the *alteration* increases design lateral loads ~~in accordance with Section 1609 or 1613 of the *International Building Code*~~, or where the *alteration* results in a prohibited structural irregularity as defined in ASCE 7, or where the *alteration* decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall ~~be shown to meet the requirements of Sections 1609 and 1613 of the *International Building Code*. For purposes of this section, compliance with ASCE 41, using a Tier 3 procedure and the two-level performance objective in Table 301.1.4.1 for the applicable risk category, Reduced International Building Code-level seismic forces shall be deemed to meet the requirements of Section 1613 of the *International Building Code* permitted.~~

**Exception:** Any existing lateral load-carrying structural element whose demand-capacity ratio with the *alteration* considered is ~~no~~ not more than 10 percent greater than its demand-capacity ratio with the *alteration* ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the *International Building Code*. Reduced International Building Code-level seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of *additions* and *alterations* since original construction.

**[BS] 807.5 Existing structural elements resisting lateral loads.** Except as permitted by Section 807.6, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall ~~be shown to meet the wind requirements of Sections 1609 and seismic provisions 1613 of the *International Building Code*. Reduced *International Building Code*-level seismic forces in accordance with Section 301.1.4.2 shall be permitted.~~

**Exception:** Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with ~~*International Building Code*~~ Sections 1609 and 1613 of the *International Building Code*. Reduced *International Building Code* level seismic forces in accordance with Section 301.1.4.2 shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of additions and alterations since original construction.

**Reason:** This proposal makes corresponding sections of the Prescriptive and Work Area methods identical. It makes a number of editorial revisions (listed below) and one substantive change. The substantive change is this: Currently, for exactly the same

situations, Section 807.5 allows the use of reduced seismic loads, while Section 403.4 does not. Reduced loads are appropriate in these cases, so the proposal revises 403.4 to match 807.5. The editorial changes simply make the wording match, applying the preferred language from the two parallel sections:

- In 403.4, the reference to the section on voluntary retrofit should be to 403.9, not 403.5. This is errata.
- In 807.5, instead of referring to "wind and seismic provisions," the text should refer more specifically to Sections 1609 and 1613.

**Cost Impact:** Will not increase the cost of construction  
Could actually REDUCE the cost of certain triggered upgrades. Otherwise, editorial.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal correlates provisions of the work area method with those of the prescriptive method, making an additional editorial change that simplifies the requirements.

**Assembly Action:**

**None**

**Final Action Results**

**EB20-16**

**AS**

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## Code Change No: **EB21-16**

### Original Proposal

**Section:** [BS] 403.4.1, [BS] 403.6, [BS] 403.7

**Proponent:** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 403.4.1 Seismic Design Category F.** Where the work area portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, and where the building is assigned to Seismic Design Category F, the structure of the altered building shall be shown to meet the earthquake design provisions of the *International Building Code*. For purposes of this section, the earthquake loads need not be taken greater than 75 percent of those prescribed in Section 1613 of the *International Building Code* for new buildings of similar occupancy, purpose and location. New structural members and connections required by this section shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

**[BS] 403.6 Wall anchorage for unreinforced masonry walls in major alterations.** Where the work area portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, the building is assigned to Seismic Design Category C, D, E or F, and the building's structural system includes unreinforced masonry walls, the alteration work shall include installation of wall anchors at the roof line to resist seismic forces, unless an evaluation demonstrates compliance of existing wall anchorage. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of new buildings of similar structure, purpose and location.

**[BS] 403.7 Bracing for unreinforced masonry parapets in major alterations.** Where the work area portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, and where the building is assigned to Seismic Design Category C, D, E or F, parapets constructed of unreinforced masonry shall have bracing installed as needed to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of similar nonstructural components in new buildings of similar purpose and location.

**Reason:** This proposal revises these provisions more consistent with the work area method which would only address alterations that have reconfigured space over 50% of the building. This proposal limits the area of alterations to the defined term; "work area". This will prevent the inclusion of other areas, such as portions of the building where incidental work is being performed. This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2014 and 2015 the BCAC has held 5 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: [BCAC](#)

**Cost Impact:** Will not increase the cost of construction  
This proposal will not increase the cost of construction as it limits the area of alteration to the work area.



**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**[BS] 403.4.1 Seismic Design Category F.** Where the work area ~~portion of the building undergoing the intended alteration~~ exceeds 50 percent of the ~~aggregate building area of the building~~, and where the building is assigned to Seismic Design Category F, the structure of the altered building shall be shown to meet the earthquake design provisions of the *International Building Code*. For purposes of this section, the earthquake loads need not be taken greater than 75 percent of those prescribed in Section 1613 of the *International Building Code* for new buildings of similar occupancy, purpose and location. New structural members and connections required by this section shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

**[BS] 403.6 Wall anchorage for unreinforced masonry walls in major alterations.** Where the work area ~~portion of the building undergoing the intended alteration~~ exceeds 50 percent of the ~~aggregate building area of the building~~, the building is assigned to Seismic Design Category C, D, E or F, and the building's structural system includes unreinforced masonry walls, the alteration work shall include installation of wall anchors at the roof line to resist seismic forces, unless an evaluation demonstrates compliance of existing wall anchorage. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of new buildings of similar structure, purpose and location.

**[BS] 403.7 Bracing for unreinforced masonry parapets in major alterations.** Where the work area ~~portion of the building undergoing the intended alteration~~ exceeds 50 percent of the ~~aggregate building area of the building~~, and where the building is assigned to Seismic Design Category C, D, E or F, parapets constructed of unreinforced masonry shall have bracing installed as needed to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of similar nonstructural components in new buildings of similar purpose and location.

**Committee Reason:** This code change clarifies the work are method as it applies to alterations. The modification makes futher simplifications and also substitutes the defined term, "building area".

**Assembly Action**

**None**

**Final Action Results**

**EB21-16**

**AM**

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**Code Change No: EB22-16**

**Original Proposal**

**Section:** [BS] 403.4.1

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 403.4.1 Seismic Design Category F.** Where the portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, and where the building is assigned to Seismic Design Category F, the structure of the altered building shall ~~be shown to meet the earthquake design provisions~~ requirements of Sections 1609 and 1613 of the *International Building Code*. For purposes of this section, the earthquake loads need not be taken greater than 75 percent of those prescribed in Section 1613 of the *International Building Code* for new buildings of similar occupancy, purpose and location. New structural members and connections required by this section shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

**Reason:** This proposal reconciles a substantive difference between the Work Area and Prescriptive methods. Current section 403.4.1 already has a seismic evaluation/retrofit trigger that matches section 907.4.3, but 907.4.3 also has a wind requirement. This proposal adds a matching wind requirement to the Prescriptive provision. Since the provision only applies in high seismic areas (SDC F), it is unlikely that a wind requirement will govern over the seismic requirement, but IBC provisions traditionally treat wind and seismic together, so the Work Area method is preferred, and the Prescriptive method is revised to match.

**Cost Impact:** Will increase the cost of construction  
Cost-beneficial cost increase, only for SDC F buildings with high wind loads undergoing major alterations.

**Report of Committee Action Hearings**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** This proposal correlates alteration requirements under the work area method with those of the prescriptive method, making the requirements under the work area method clearer.

**Assembly Action:** **None**

**Final Action Results**

**EB22-16** **AS**

## Code Change No: **EB23-16**

### Original Proposal

**Section:** [BS] 403.4.1, [BS] 907.4.3

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

~~[BS] 403.4.1~~ **403.5 Seismic Design Category F.** Where the portion of the building undergoing the intended alteration work area exceeds 50 percent of the aggregate building area of the building, and where the building is assigned to Seismic Design Category F, the structure of the altered building shall be shown to meet the earthquake design provisions requirements of the *International Building Code*. For purposes of this section, the earthquake loads need not be taken greater than 75 percent of those prescribed in Section 1613 of the *International Building Code* for new buildings of similar occupancy, purpose and location. New structural members and connections required by this section Reduced *International Building Code*-level seismic forces shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location be permitted.

~~[BS] 907.4.3~~ **907.5 Seismic Design Category F.** Where the building is assigned to Seismic Design Category F, the evaluation and analysis shall demonstrate that the lateral load resisting system structure of the altered building or structure complies with reduced shall meet the requirements of Sections 1609 and 1613 of the *International Building Code*. Reduced *International Building Code*-level seismic forces in accordance with Section 301.1.4.2 and with the wind provisions applicable to a limited structural alteration shall be permitted.

**Reason:** This proposal simplifies and clarifies the wording of corresponding proposals in the Work Area and Prescriptive methods. Current 403.4.1:

- Renumber to 403.5. This can and should be a stand-alone provision, independent of the basic alteration check and 10% rule in 403.4.
- Use the defined terms "work area" and "building area."
- Replace the "75% of code" wording with the simpler call out for reduced seismic loads.
- Omit the sentence about "new structural members and connections," as this is now covered by the general provisions in Chapter 3.

Current 907.4.3:

- Renumber to 907.5. Each of the lateral system provisions in 907.4 should be independent to avoid confusion over the exceptions in 907.4. A more complete reorganization of 907.4 is being proposed separately.
- Simplify the call out for reduced seismic loads.

Note that the current Work Area provision triggers a wind evaluation/retrofit, while the Prescriptive provision does not. Because this is an editorial proposal, reconciliation, while recommended, will be left to a separate proposal.

**Cost Impact:** Will not increase the cost of construction

This proposal is editorial, therefore there is no change in construction requirements.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** Approval of this proposal continues the correlation of the prescriptive method provision with those of the work area method and is consistent with prior actions. Also see reason for EB22-16.

**Assembly Action:**

**None**

**Final Action Results**

**EB23-16**

**AS**

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## Code Change No: **EB26-16**

### Original Proposal

**Section:** 907.4.6 (New), [BS] 403.5, [BS] 403.6, [BS] 403.7, [BS] 707.3.1, [BS] 907.4.5, [BS] 907.4.6

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 403.5 Bracing for unreinforced masonry parapets upon reroofing.** Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. ~~For purposes of this section, design Reduced International Building Code-level seismic forces need not shall be taken greater than 75 percent of those that would be required for the design of similar nonstructural components in new buildings of similar purpose and location permitted.~~

**[BS] 403.6 Wall anchorage Anchorage for unreinforced masonry walls in major alterations.** Where the portion of the building undergoing the intended alteration work area exceeds 50 percent of the aggregate building area of the building, the building is assigned to Seismic Design Category C, D, E or F, and the building's structural system includes unreinforced masonry bearing walls, the alteration work shall include installation of wall anchors at the roof line to resist seismic forces, unless an evaluation demonstrates compliance of existing wall anchorage. ~~For purposes of this section, design Reduced International Building Code-level seismic forces need not shall be taken greater than 75 percent of those that would be required for the design of new buildings of similar structure, purpose and location permitted.~~

**[BS] 403.7 Bracing for unreinforced masonry parapets in major alterations.** Where the portion of the building undergoing the intended alteration work area exceeds 50 percent of the aggregate building area of the building, and where the building is assigned to Seismic Design Category C, D, E or F, parapets constructed of unreinforced masonry shall have bracing installed as needed to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. ~~For purposes of this section, design Reduced International Building Code-level seismic forces need not shall be taken greater than 75 percent of those that would be required for the design of similar nonstructural components in new buildings of similar purpose and location permitted.~~

**[BS] 707.3.1 Bracing for unreinforced masonry bearing wall parapets.** Where a permit is issued for reroofing for more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist the reduced International Building Code level seismic forces as specified in Section 301.1.4.2 of this code, unless an evaluation demonstrates compliance of such items. ~~Reduced International Building Code-level seismic forces shall be permitted.~~

**[BS] 907.4.5 Wall anchors Anchorage for concrete and reinforced masonry buildings walls.** For any building assigned to Seismic Design Category D, E or F with a structural system consisting of that includes concrete or reinforced masonry walls with a flexible roof diaphragm and any building assigned to Seismic Design Category C, D, E or F with a structural system consisting of unreinforced masonry walls with any type of roof diaphragm, the alteration work shall include installation of wall anchors at the roof line to resist the reduced International Building Code level seismic forces in accordance with Section

301.1.4.2, unless an evaluation demonstrates compliance of existing wall anchorage. Reduced *International Building Code*-level seismic forces shall be permitted.

**Add new text as follows:**

**907.4.6 Anchorage for unreinforced masonry walls.** For any building assigned to Seismic Design Category C, D, E or F with a structural system that includes unreinforced masonry bearing walls, the alteration work shall include installation of wall anchors at the roof line, unless an evaluation demonstrates compliance of existing wall anchorage. Reduced *International Building Code*-level seismic forces shall be permitted.

**Revise as follows:**

**[BS] ~~907.4.6~~ 907.4.7 Bracing for unreinforced masonry parapets.** Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category C, D, E or F shall have bracing installed ~~as needed to resist the reduced *International Building Code*-level seismic forces in accordance with Section 301.1.4.2,~~ unless an evaluation demonstrates compliance of such items. Use of reduced *International Building Code*-level seismic forces shall be permitted.

**Reason:** This proposal makes editorial improvements to matching provisions from the Prescriptive and Work Area methods. 403.5: Replace the "75 percent" design criteria with a simpler and more correct call out for reduced seismic loads. The intent is to match the use of reduced loads already in the Work Area method (907.4.5). 403.6:

- Use the defined term "work area." Both the current text and the proposal intend to match the work area trigger to Level 3 Alterations.
- Simplify the call out for reduced seismic loads.

403.7:

- Use "work area" as in 403.6.
- Simplify the call out for reduced seismic loads.

707.3.1: Simplify the call out for reduced seismic loads.

907.4.5:

- Split the provision into two for clarity and ease of revision. 907.4.5 will remain for concrete and reinforced masonry walls. 907.4.6 will be added for unreinforced masonry walls.
- Simplify the call out for reduced seismic loads.

New 907.4.6:

- Create a new section from the URM portion of current 907.4.5.
- Simplify the call out for reduced seismic loads.

Current 907.4.6:

- Renumber.
- Simplify the call out for reduced seismic loads.

**Cost Impact:** Will not increase the cost of construction  
These requirements are editorial, therefore there will be no change in construction requirements.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal makes editorial changes to the IEBC requirements for unreinforced masonry that improve the clarity of these provisions. It furthers the correlation between the prescriptive method provisions and those of the work area method.

**Assembly Action:**

**None**

**Final Action Results**

**EB26-16**

**AS**

## Code Change No: **EB27-16**

### Original Proposal

**Section:** [BS] 403.6, [BS] 907.4.5

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 403.6 Wall anchorage for unreinforced masonry walls in major alterations.** Where the portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, the building is assigned to Seismic Design Category C, D, E or F, and the building's structural system includes unreinforced masonry walls, the alteration work shall include installation of wall anchors at the floor and roof line-lines to resist seismic forces, unless an evaluation demonstrates compliance of existing wall anchorage. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of new buildings of similar structure, purpose and location.

**[BS] 907.4.5 Wall anchors for concrete and masonry buildings.** For any building assigned to Seismic Design Category D, E or F with a structural system consisting of concrete or reinforced masonry walls with a flexible roof diaphragm and any building assigned to Seismic Design Category C, D, E or F with a structural system consisting of unreinforced masonry walls with any type of roof diaphragm, the alteration work shall include installation of wall anchors at the roof line of all subject buildings and at the floor lines of unreinforced masonry buildings to resist the reduced *International Building Code*-level seismic forces in accordance with Section 301.1.4.2, unless an evaluation demonstrates compliance of existing wall anchorage.

**Reason:** This proposal extends the URM mitigation requirement for Level 3 alteration projects.

Currently, Level 3 alterations trigger URM parapet bracing and anchors at the roof line in both the Work Area and Prescriptive methods. However, experience in Christchurch and standard, feasible practice in Massachusetts and California indicate that URM walls should be anchored at floor levels as well, in order to achieve even basic collapse prevention performance. (IEBC Appendix A1 and ASCE 41 Chapter 15 say the same.)

An alteration that already involves more than half of the building (a Level 3 Alteration in WAM terms) justifies this proactive mitigation, which not only protects the subject building and adjacent spaces and property, but also makes the essential parapet and roof level work more reliable.

Note: A separate proposal would split 907.4.5 into two sections for editorial clarity. If that proposal is approved, this proposal can be effected simply by changing "roof line" to "floor and roof lines" in the new URM section, to match proposed 403.6 shown here.

**Cost Impact:** Will increase the cost of construction

A small additional cost with a high benefit-cost ratio for URM buildings with major alterations. No additional cost for lesser alterations.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This code change will improve the performance of vulnerable unreinforced masonry structures by extending the wall anchor requirements to include floor lines.

**Assembly Action:**

**None**

**Final Action Results**

**EB27-16**

**AS**

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**Code Change No: EB28-16**

**Original Proposal**

**Section: 403.7 (New)**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Add new text as follows:**

**403.7 Anchorage for concrete and reinforced masonry walls.** Where the work area exceeds 50 percent of the building area, the building is assigned to Seismic Design Category D, E or F, and the building's structural system includes concrete or reinforced masonry walls with a flexible roof diaphragm, the alteration work shall include installation of wall anchors at the roof line, unless an evaluation demonstrates compliance of existing wall anchorage. Use of reduced International Building Code-level seismic forces shall be permitted.

**Reason:** This proposal resolves an inconsistency between the Work Area method and the Prescriptive method. Currently, the Work Area method has a sensible provision that requires roof-to-wall anchors in Level 3 Alterations for concrete and reinforced masonry walls as well as URM walls (907.4.5) but the Prescriptive method addresses only URM walls (403.6). This proposal adds a matching proposal for concrete and RM walls to the Prescriptive method.

**Cost Impact:** Will increase the cost of construction For certain buildings, including vulnerable tilt-ups, undergoing major alterations. No change for other buildings or lesser alterations.

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** Concrete and masonry walls pose a hazard that needs to be addressed and this change will include the installation of wall anchors as part of required alterations.

**Assembly Action:**

**None**

**Final Action Results**

**EB28-16**

**AS**

## Code Change No: **EB29-16**

### Original Proposal

**Section: 403.8 (New), 907.4.7 (New)**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Add new text as follows:**

**403.8 Anchorage of unreinforced masonry partitions in major alterations.** Where the work area exceeds 50 percent of the building area, and where the building is assigned to Seismic Design Category C, D, E, or F, unreinforced masonry partitions and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed, or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Use of reduced *International Building Code*-level seismic forces shall be permitted.

**907.4.7 Anchorage of unreinforced masonry partitions.** Where the building is assigned to Seismic Design Category C, D, E, or F, unreinforced masonry partitions and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed, or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Use of reduced *International Building Code*-level seismic forces shall be permitted.

**Reason:** This proposal adds a proactive mitigation trigger to address a common nonstructural falling hazard.

Currently, both the Prescriptive and Work Area methods include mitigation requirements for URM parapets and bearing walls, triggered by major (Level 3) alterations. A related hazard involves the failure of interior unreinforced masonry partitions, especially around stairwells and egress corridors.

Mitigation of this well-understood and common hazard is justified by a Level 3 alteration. Still, to avoid disproportionate impacts not associated with the intended work, the proposal would require the mitigation only within the work area and along egress paths from the work area to building exits. In many cases, an alteration project that involves 50 percent of a building's area will already have some partition removal or replacement in its scope.

**Cost Impact:** Will increase the cost of construction

The cost increase is for URM partitions only, and only within the work area and egress paths. Where the intended work already involves partition alteration, there is no cost increase.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal addresses a significant potential hazard from unreinforced masonry partitions when major alterations are being performed. It was suggested that addressing portions of the means of egress that are beyond the work is also advisable and encourage a public comment.

**Assembly Action:**

**None**

### Final Action Results

**EB29-16**

**AS**

## Code Change No: **EB31-16**

### Original Proposal

**Section: 403.8 (New), [BS] 907.4, [BS] 907.4.2.**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Add new text as follows:**

**403.8 Substantial structural alteration.** Where the work area exceeds 50 percent of the building area and where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural alteration within a 5-year period, the lateral load-resisting system of the altered building shall satisfy the requirements of Sections 1609 and 1613 of the *International Building Code*. Reduced *International Building Code*-level seismic forces shall be permitted. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.

**Exceptions:**

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of the *International Building Code* or in compliance with the provisions of the *International Residential Code*.
2. Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

**Revise as follows:**

**[BS] 907.4 Existing structural elements resisting lateral loads.** All existing elements of the lateral force-resisting system shall comply with this section.

**Exceptions:**

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of the *International Building Code* or in compliance with the provisions of the *International Residential Code*.
- ~~2. Where such alterations involve only the lowest story of a building and the change of occupancy provisions of Chapter 10 do not apply, only the lateral force-resisting components in and below that story need comply with this section.~~
2. Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

**[BS] 907.4.2 Substantial structural alteration.** Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural *alteration* within a

5-year period, the ~~evaluation and analysis shall demonstrate that the lateral load-resisting system of the altered building or structure complies with~~ shall satisfy the requirements of Sections 1609 and 1613 of the *International Building Code*, for wind loading and with reduced ~~Reduced~~ *International Building Code*-level seismic forces in accordance with Section 301.1.4.2 shall be permitted. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.

**Reason:** This proposal reconciles a significant difference between the Prescriptive method and the Work Area method. Currently, the Work Area method triggers a potential seismic upgrade for a Level 3 Alteration project whose intended scope includes a substantial alteration (as defined in 907.4.2). The Prescriptive method has no such trigger. This proposal adds the identical trigger to the prescriptive method.

Note the limited scope, to match the Work Area method provisions from 907.4 and 907.4.2:

- It applies only to a major (or Level 3) alteration, where the intended work area exceeds 50 percent of the building area.
- It applies only where the intended alteration already involves substantial structural scope.
- Reduced seismic forces are allowed.
- The entire trigger is waived for small residential buildings where the work complies with the IRC or light frame requirements.
- The entire trigger is waived above the first story when the intended alteration would affect only the first story.

In addition, a few editorial clarifications to Sections 907.4 and 907.4.2 are proposed so that the provisions in the different methods will match. For example, Exception 2 omits the unnecessary phrase regarding change of occupancy; this phrase is meant to confirm that any change of occupancy requirements would override the exception, but such a statement is not needed because the IBC applies requirements for multiple project types independently and cumulatively.

Finally, if the quasi-definition of a Substantial Structural Alteration from current 907.4.2 can be moved to the Chapter 2 definitions (as is being proposed separately), both 907.4.2 and proposed 403.8 can be simplified by simply using that defined term

**Cost Impact:** Will increase the cost of construction

For a major alteration with substantial structural alteration as part of its intended scope, the cost will increase as needed to do a seismic upgrade with reduced loads. The additional cost could be zero, or it could be more than zero.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This code change reconciles differences between provision of the prescriptive method and those of the work area method. Its approval is consistent with prior actions.

**Assembly Action:**

**None**

### Final Action Results

**EB31-16**

**AS**

## Code Change No: **EB33-16**

### Original Proposal

**Section:** [BS] 403.9, [BS] 807.6

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 403.9 Voluntary ~~seismic improvements lateral force-resisting system alterations.~~ *Alterations to existing structural elements or additions of new structural elements* Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not otherwise required by other sections of this chapter and are initiated for code shall not be required to meet the purpose requirements of improving the performance Section 1609 or Section 1613 of the seismic force-resisting system of an existing structure or the performance of seismic bracing or anchorage of existing nonstructural elements shall be permitted *International Building Code*, provided that an engineering analysis is submitted demonstrating the following:**

- ~~1. The altered structure and the altered nonstructural elements are no less conforming to the provisions of the *International Building Code* with respect to earthquake design than they were prior to the alteration.~~
- ~~2. New structural elements are detailed as required for new construction.~~
  1. The capacity of existing structural systems to resist forces is not reduced;
  2. New structural elements are detailed and connected to existing or new structural elements as required by the *International Building Code* for new construction;
3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the *International Building Code* for new construction; and
4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

**[BS] 807.6 Voluntary lateral force-resisting system alterations. *Structural Alterations alterations of existing structural elements and additions of new structural elements* that are initiated for the purpose of increasing intended exclusively to improve the lateral force-resisting strength or stiffness of an existing structure system and that are not required by other sections of this code shall not be required to be designed for forces conforming to meet the requirements of Section 1609 or Section 1613 of the *International Building Code*, provided that an engineering analysis is submitted to show that:**

1. The capacity of existing structural elements required systems to resist forces is not reduced;
- ~~2. The lateral loading to existing structural elements is not increased either beyond its capacity or more than 10 percent;~~
- ~~23.~~ 23. New structural elements are detailed and connected to the existing or new structural elements as required by the *International Building Code* for new construction;
- ~~34.~~ 34. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the *International Building Code* for new construction; and
4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.
- ~~5. A dangerous condition as defined in this code is not created.~~

~~Voluntary alterations to lateral force-resisting systems conducted in accordance with Appendix A and the referenced standards of this code shall be permitted.~~

**Reason:** This proposal reconciles differences between the voluntary retrofit provisions in the Prescriptive and Work Area methods. In general, since neither provision actually relieves a voluntary retrofit project from any other code requirements (for example regarding egress, accessibility, or fire safety), an argument can be made that these provisions are not even needed, as any of the work they contemplate should already be covered by more general provisions for alterations. However, these provisions are considered useful for encouraging this voluntary work. The main purpose of the proposal is to provide identical wording in each method. To do this, the proposal simplifies the base provision in each case and borrows bits from each current provision, with two objectives:

- The work cannot make the building worse.
- New structural elements should meet IBC standards for materials and detailing, but not necessarily design force levels or drift limits.

Note that the current IEBC improperly shows the final sentence of 807.6 as part of list item 5. Both that list item (regarding dangerous conditions) and the final sentence (regarding the acceptability of IEBC Appendix A) are deleted by this proposal."

**Cost Impact:** Will not increase the cost of construction  
This proposal is a clarification of intent, with editorial changes. There is no change to construction requirements.

**Staff note:** There is a published errata to Section 807.6 that has been incorporated into this text.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal coordinates the provisions of the prescriptive method with those of the work area method pertaining to voluntary upgrades of the lateral force system. As indicated in the proponent's reason it simplifies the base provision under each method and simplifies the wording.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB33-16**

**AS**

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## Code Change No: **EB36-16**

### Original Proposal

**Section: 407.1, 407.4 (New), 407.4.1 (New), 407.4.2 (New), 407.4.4 (New), [BS] 407.4**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**407.1 Conformance.** No change shall be made in the use or occupancy of any building unless such building is made to comply with the requirements of the *International Building Code* for the use or occupancy. Changes in use or occupancy in a building or portion thereof shall be such that the existing building is no less complying with the provisions of this code than the existing building or structure was prior to the change. Subject to the approval of the building official, the use or occupancy of *existing buildings* shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

**Exception:** The building need not be made to comply with Chapter 16 of the seismic requirements for a new structure-*International Building Code* unless required by Section 407.4.

**Add new text as follows:**

**407.4 Structural.** Any building undergoing a change of occupancy shall satisfy the requirements of this section.

**407.4.1 Live loads.** Structural elements carrying tributary live loads from an area with a change of occupancy shall satisfy the requirements of Section 1607 of the *International Building Code*. Design live loads for areas of new occupancy shall be based on Section 1607 of the *International Building Code*. Design live loads for other areas shall be permitted to use previously approved design live loads.

**Exception:** Structural elements whose demand-capacity ratio considering the change of occupancy is not more than 5 percent greater than the demand-capacity ratio based on previously approved live loads need not comply with this section.

**407.4.2 Snow and wind loads.** When a change of occupancy results in a structure being assigned to a higher risk category, the structure shall satisfy the requirements of Sections 1608 and 1609 of the *International Building Code* for the new risk category.

**Exception:** Where the area of the new occupancy is less than 10 percent of the building area, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.

**Revise as follows:**

**[BS] ~~407.4~~ 407.4.3 Structural Seismic loads.** When a *change of occupancy* results in a structure being reclassified to a higher risk category, the structure shall conform to the seismic requirements for a new



structure of the higher risk category. For purposes of this section, compliance with ASCE 41, using a Tier 3 procedure and the two-level performance objective in Table 301.1.4.1 for the applicable risk category, shall be deemed to meet the requirements of Section 1613 of the *International Building Code*.

**Exceptions:**

1. Specific seismic detailing requirements of Section 1613 of the *International Building Code* for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, overstrength, redundancy and ductility of the structure.
2. When a change of use results in a structure being reclassified from Risk Category I or II to Risk Category III and the structure is located where the seismic coefficient, SDS, is less than 0.33, compliance with the seismic requirements of Section 1613 of the *International Building Code* is not required.

**Add new text as follows:**

**407.4.4 Access to Risk Category IV.** Any structure that provides operational access to an adjacent structure assigned to Risk Category IV as the result of a change of occupancy shall itself satisfy the requirements of Sections 1608, 1609, and 1613 of the *International Building Code*. For compliance with Section 1613, *International Building Code*-level seismic forces shall be used. Where operational access to the Risk Category IV structure is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided.

**Reason:** This proposal reconciles substantive differences between the Prescriptive method and the Work Area method.

Currently, the Prescriptive method has only one load-specific structural provision related to change of occupancy -- 407.4, which triggers a seismic upgrade (with exceptions) when the risk category increases. Otherwise, the upgrades are triggered generally by current Section 407.1, which simply requires any building with any change of occupancy to meet all requirements -- with NO exceptions -- for the new occupancy.

Thus, while the proposal looks like it is adding new upgrade requirements, it is actually substantially reducing upgrade requirements for wind and snow by loosening the trigger and by adding exceptions. In doing so, it is also recognizing the way the current code is actually being implemented.

The proposed wording matches the editorial revisions being proposed separately to corresponding sections of 1007.

Proposed section 407.4.4 matches a substantive change being proposed separately to section 1007.3. If this proposal is approved and the proposal to change 1007.3 is disapproved, we will submit a public comment to this proposal to ensure that the Prescriptive and Work Area provisions remain identical.

**Cost Impact:** Will not increase the cost of construction

It will actually decrease the cost of construction by introducing exceptions not currently available to users of the prescriptive method.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal coordinates the provisions of the prescriptive method with those of the work area method with respect to change in use.

**Assembly Action:**

**None**

**Final Action Results**

**EB36-16**

**AS**



## Code Change No: **EB38-16**

### Original Proposal

**Section:** [BS] 1007.3.1, [BS] 407.4

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 407.4 ~~Structural~~ Seismic force-resisting system.** When a *change of occupancy* results in a ~~structure~~ building being ~~reclassified~~ assigned to a higher risk category, the ~~structure~~ building shall conform to the seismic requirements for a new structure of the higher risk category. For purposes of this section, compliance with ASCE 41, using a Tier 3 procedure and the two-level performance objective in Table 301.1.4.1 for the applicable risk category, shall be deemed to meet satisfy the requirements of Section 1613 of the *International Building Code* for the new risk category using International Building Code-level seismic forces.

**Exceptions:**

1. ~~Specific seismic detailing requirements of Section 1613 of the *International Building Code* for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, overstrength, redundancy and ductility of the structure. Where the area of the new occupancy is less than 10 percent of the building area and the new occupancy is not assigned to Risk Category IV, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.~~
2. ~~When a change of use results in a structure building being reclassified from Risk Category I or II to Risk Category III and the structure is located where the seismic coefficient,  $SDSS_{DS}$ , is less than 0.33, compliance with the seismic requirements of Section 1613 of the *International Building Code* this section is not required.~~
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III, when assigned to Seismic Design Category A or B, shall be permitted to use Appendix Chapter A1 of this code.

**[BS] 1007.3.1 ~~Compliance with International Building Code-level seismic forces.~~ Seismic force-resisting system.** ~~Where~~ When a building or portion thereof is subject to a *change of occupancy* that results in the ~~a~~ building being assigned to a higher risk category based on Table 1604.5 of the *International Building Code*, the building shall ~~comply with~~ satisfy the requirements ~~for of~~ Section 1613 of the *International Building Code* level seismic forces as specified in Section 301.1.4.1 for the new risk category using International Building Code-level seismic forces

**Exceptions:**

1. ~~Where approved by the code official, specific detailing provisions required for a new structure are not required to be met where it can be shown that an equivalent level of performance and seismic safety is obtained for the applicable risk category based on the provision for reduced *International Building Code*-level seismic forces as specified in Section 301.1.4.2.~~ When a change of use results in a building being reclassified from Risk Category I

- or II to Risk Category III and the seismic coefficient,  $S_{DS}$ , is less than 0.33, compliance with this section is not required.
2. ~~Where the area of the new occupancy with a higher hazard category is less than or equal to 10 percent of the total building floor area and the new occupancy is not classified as assigned to Risk Category IV. For the purposes of, compliance with this exception, buildings occupied by two or more occupancies section is not included in the same risk category, shall be subject to the provisions of Section 1604.5.1 of the *International Building Code* required. The cumulative effect of the area of occupancy changes over time shall be considered for the purposes of this exception.~~
  3. ~~Unreinforced masonry bearing wall buildings in assigned to Risk Category III, when assigned to Seismic Design Category A or B, shall be allowed permitted to be strengthened to meet the requirements of use Appendix Chapter A1 of this code [Guidelines for the Seismic Retrofit of Existing Buildings (GSREB)].~~

**Reason:** This proposal reconciles, clarifies, and simplifies the provisions for seismic upgrade triggered by a change of risk category, found in Section 407.4 in the Prescriptive method and Section 1007.3.1 in the Work Area method.

For the main provision, the proposal provides editorial clarification and simplification, ensuring identical wording for each method. For the exceptions, the proposal also ensures that the two methods will have identical content and wording. Here are the changes to the exceptions for each method:

Prescriptive method (407.4):

- Delete current Exception 1, which is obsolete. By citing "regularity, overstrength" etc. (in 407.4) and "equivalent level of performance" (in 1007.3.1), these exceptions were intended to allow performance-based retrofit criteria like ASCE 41 as an alternative to IBC Section 1613. This allowance is no longer needed for either method because IEBC Chapter 3 already allows ASCE 41 as an explicit alternative to Section 1613.
- Add a new Exception 1, matching current Exception 2 from 1007.3.1. There is no reason why this exception should be available in only one method.
- Revise current Exception 2 for clarity and simplification.
- Add a new Exception 3, matching Exception 3 from current 1007.3.1. There is no reason why this exception should be available in only one method.

Work Area method (1007.3.1):

- Delete current Exception 1. Same reason as the deletion of 407.4 Exception 1.
- Add a new Exception 1, matching current Exception 2 from 407.4. There is no reason why this exception should be available in only one method.
- Revise current Exception 2 for clarity and simplification. Note that it is not necessary to refer to IBC Section 1604.5.1, since that is already the only place where "risk category" is provided. For completeness, however, a definition of risk category will be added to the IEBC to match the IBC, as a separate proposal (or may be done by staff).
- Revise current Exception 3 for clarity and simplification.

The numbering shown for the two methods does not match due to cdpaccess limitations, but since the numbering is immaterial, I have been assured by staff that the numbering can be made identical when the code is published.

**Cost Impact:** Will not increase the cost of construction  
By adding more exceptions to each method, the proposal will actually REDUCE the cost of construction.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This code change reconciles provisions of the prescriptive method with those of the work area method. Approval is consistent with actions on prior proposals.

**Assembly Action:**

**None**

**Final Action Results**

**EB38-16**

**AS**

**Code Change No: EB58-16**

**Original Proposal**

**Section(s):** APPENDIX A, Chapter A1, Chapter A6

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Add new text as follows:**

**408.4 Structural.** Historic buildings shall comply with the applicable structural provisions in this Chapter.

**Exception:** The code official shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.

**Revise as follows:**

**[BS] 1206.1 General.** *Historic buildings* shall comply with the applicable structural provisions for the work as classified in Chapter 5.

**Exception:** The *code official* shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any ~~such~~ floor.

**Reason:** This proposal reconciles a significant difference between the Prescriptive and Work Area methods. In the current Prescriptive method, Section 408.1 says that improvements to the existing building need be made only if they are specifically required. The balance of Section 408 has no specific structural checks or upgrade triggers -- not even for added dead load or removal of a structural element -- so depending on interpretation, 408.1 has the effect of saying that historic buildings are exempt from any structural work. By contrast, in the current Work Area method, Section 1206.1 says specifically that the code's common sense structural provisions do apply to historic buildings. This proposal would match the Prescriptive method to the Work Area method, clarifying that the Chapter 4 structural requirements are safety-related and therefore should be enforced in historic buildings. The proposed wording of new section 408.4 is borrowed directly from 1206.1. The proposed revision to Section 1206.1 is merely an editorial clarification. In concept, one could argue that historic structures should be exempt from the code's few wind and seismic upgrade triggers. We might be open to that, but at the very least all checks of dead, live, and snow load, as well as confirmations of adequacy when the de facto structure is altered, should be enforced. And in any case, there is no reason for the Prescriptive and Work Area methods to differ in their structural provisions.

**Cost Impact:** Will increase the cost of construction  
If you read current 408.1 to exclude structural work, this proposal could increase construction costs. If you read current 408.2 to mean that safety-related structural provisions already apply, then this proposal will have no effect on costs.

**Report of Committee Action Hearings**

**Committee Action:** **As Submitted**

**Committee Reason:** This proposal provides the direction needed to apply the structural provisions of this chapter and gives the building official the authority to evaluate the historical building and make exceptions where needed.

**Assembly Action:** **None**

## Public Comments

### Public Comment 1:

David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net) requests Approve as Modified by this Public Comment.

Modify as follows:

**408.4 Structural.** Historic buildings shall comply with the applicable structural provisions in this Chapter.

**Exception-Exceptions:**

1. The code official shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.
2. Repair of substantial structural damage is not required to comply with Sections 404.2 and 404.3. Substantial structural damage shall be repaired in accordance with Section 404.4.

**[BS] 1206.1 General.** Historic buildings shall comply with the applicable structural provisions for the work as classified in Chapter 5.

**Exception-Exceptions:**

1. The *code official* shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.
2. Repair of substantial structural damage is not required to comply with Section 606.2.2 and 606.2.3. Substantial structural damage shall be repaired in accordance with Section 606.2.1.

**Commenter's Reason:** As noted in the EB41 reason statement, the proposal as submitted addresses a significant discrepancy between the code's two methods for historic buildings. Currently, the Work Area method (1206.1) subjects historic buildings to the same structural upgrade triggers as non-historic buildings, but the Prescriptive method (408) does not. EB41 resolves the discrepancy by adding a provision to the Prescriptive method (approved 408.4) to match the Work Area method.

Thus, as submitted and approved, historic buildings will be subject to the same structural upgrade triggers as non-historic buildings, with either method. This represents no change to the Work Area method, but a potentially significant change to the Prescriptive method.

This proposed modification offers something of a compromise for both methods. A rational argument can be made that historic buildings should not be subject to expensive and disruptive wind and seismic retrofits *when those retrofits are triggered by repairs*. Alterations, additions, relocations, and changes of occupancy are all voluntary; those projects should be subject to sensible upgrade triggers, even for historic buildings, and the projects can be scoped and budgeted to accommodate these requirements with due regard for historic preservation. EB41, as submitted and approved, does this. Repairs, however, are not voluntary, so an upgrade triggered by repair might be at odds with the priorities of preservation. Not everyone will agree with this approach; after all, historic buildings are expected to provide adequate safety too, as contemplated by current (though vague) 408.2. But if historic buildings should ever be exempt from the code's sensible wind and seismic retrofit triggers, it should be in the case of involuntary repairs.

## Final Action Results

EB58-16

AMPC1

## Code Change No: **EB42-16**

### Original Proposal

**Section: 302.4.1 (New), 801.3, [BS] 606.1, [BS] 807.2**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Add new text as follows:**

**302.4.1 New structural members and connections.** New structural members and connections shall comply with the detailing provisions of the *International Building Code* for new buildings of similar structure, purpose, and location.

**Exception:** Where alternative design criteria are specifically permitted.

**Revise as follows:**

**[BS] 606.1 General.** Structural repairs shall be in compliance with this section and Section 601.2. Regardless of the extent of structural or nonstructural damage, *dangerous* conditions shall be eliminated. ~~Regardless of the scope of repair, new structural members and connections used for repair or rehabilitation shall comply with the detailing provisions of the *International Building Code* for new buildings of similar structure, purpose and location.~~

**801.3 Compliance.** All new construction elements, components, systems, and spaces shall comply with the requirements of the *International Building Code*.

**Exceptions:**

1. Windows may be added without requiring compliance with the light and ventilation requirements of the *International Building Code*.
2. Newly installed electrical equipment shall comply with the requirements of Section 808.
3. The length of dead-end corridors in newly constructed spaces shall only be required to comply with the provisions of Section 805.6.
4. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be 7 feet (2134 mm).
5. New structural members and connections shall comply with alternative design criteria in accordance with Section 302.

**Delete without substitution:**

~~**[BS] 807.2 New structural elements.** New structural elements in alterations, including connections and anchorage, shall comply with the *International Building Code*.~~

**Reason:** This proposal relocates multiple overlapping provisions to Chapter 3 and provides a necessary exception to account for alternative seismic criteria.

Proposed section 302.4.1 replaces duplicate and overlapping provisions in 606.1 and 807.2.

The proposed exception accounts for a nuance that even 606.1 and 807.2 did not explicitly account for. The performance-based seismic criteria in ASCE 41, as well as the reduced seismic criteria allowed in numerous cases, do not explicitly meet the IBC's strength, stiffness, or detailing provisions for new construction.

Since Section 801.3 makes a similar code-based requirement, an exception is added to the list.

**Cost Impact:** Will not increase the cost of construction  
Clarification of current intent, with some possible cost decrease.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Modified**

**Modify as follows:**

**801.3 Compliance.** All new construction elements, components, systems, and spaces shall comply with the requirements of the *International Building Code*.

**Exceptions:**

1. Windows may be added without requiring compliance with the light and ventilation requirements of the *International Building Code*.
2. Newly installed electrical equipment shall comply with the requirements of Section 808.
3. The length of dead-end corridors in newly constructed spaces shall only be required to comply with the provisions of Section 805.6.
4. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be 7 feet (2134 mm).
5. New structural members and connections shall be permitted to comply with alternative design criteria in accordance with Section 302.

**Committee Reason:** This code change provides better clarity by eliminating duplication and relocating criteria for new structural members. The modification rewords the new exception to make it a permitted option.

**Assembly Action**

**None**

<b>Final Action Results</b>
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**EB42-16**

**AM**

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**Code Change No: EB43-16**

**Original Proposal**

**Section: 606.2.1.1 (New), [BS] 606.2.1.**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 606.2.1 Repairs for less than substantial structural damage.** ~~For~~ Unless otherwise required by this section, for damage less than *substantial structural damage*, the damaged elements shall be permitted to be restored to their predamage condition.

**Add new text as follows:**

**606.2.1.1 Snow damage** Structural components whose damage was cause by or related to snow load effects shall be repaired, replaced, or altered to satisfy the requirements of Section 1608 of the *International Building Code*.

**Reason:** This proposal adds a limited and minor upgrade requirement for structural damage caused by snow. Instead of allowing repair to the predamage condition, the proposal would require any repaired or replaced elements -- but not any other similar elements that escaped damage -- to be designed for the requirements for new construction. This requirement is justified because snow loads, especially with the effects of climate change, are different from dead, live, earthquake, and wind loads that are otherwise addressed in Chapter 6. Existing framing carrying dead and live loads generally does not require upgrade even when it's non-conforming because it has a history of adequate service. Design level snow loads don't have that history. And unlike wind or earthquake loads, snow loads at damaging or design levels are likely to occur again within a few years. Thus, it is folly to allow deficient components to be repaired only to the state in which we can expect them to be damaged again next winter.

**Cost Impact:** Will increase the cost of construction  
There will be a slight increase in the cost of construction, but only the damaged elements.

**Report of Committee Action Hearings**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** This code change introduces a common sense approach to repairing structural components damaged by snow loading.

**Assembly Action:** **None**

**Final Action Results**

**EB43-16 AS**

## Code Change No: **EB44-16**

### Original Proposal

**Section:** [BS] 606.2.3.1

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 606.2.3.1 Lateral force-resisting elements.** Regardless of the level of damage to ~~gravity~~ vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 606.2.2.1 and, if noncompliant, rehabilitated in accordance with Section 606.2.2.3.

**Exceptions:**

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

**Reason:** This is a simple correction. The provision intends to refer to the vertical elements of the LFRS, as covered in 606.2.2.

**Cost Impact:** Will not increase the cost of construction  
This is an editorial correction, therefore there is no change to construction requirements.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal clarifies the requirements for lateral force-resisting elements by correctly referring to "vertical" elements..

**Assembly Action:**

**None**

### Final Action Results

**EB44-16**

**AS**



**Code Change No: EB46-16**

**Original Proposal**

**Section:** [BS] 706.1, [BS] 706.3, 706.3 (New), 706.3.1 (New), 706.3.1.1 (New)

**Proponent:** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org); Maureen Traxler (maureen.traxler@seattle.gov)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 706.1 General.** Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15 of the *International Building Code*.

**Exception Exceptions:** Reroofing

1. Roof replacement or roof recover of existing low slope roof coverings shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section 1507 of the *International Building Code* for roofs that provide positive roof drainage.
2. Recovering or replacing an existing roof covering shall not be required to meet the requirement for secondary (emergency overflow) drains or scuppers in Section 1503.4 of the *International Building Code* for roofs that provide for positive roof drainage. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1503.4 of the *International Building Code*.

**[BS] 706.2 Structural and construction loads.** Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.

**Delete without substitution:**

~~**[BS] 706.3 Recovering versus replacement.** New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:~~

- ~~1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.~~
- ~~2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.~~
- ~~3. Where the existing roof has two or more applications of any type of roof covering.~~

**Exceptions:**

- ~~1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.~~

- ~~2. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 706.4.~~
- ~~3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.~~
- ~~4. Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507 of the *International Building Code*.~~

**Add new text as follows:**

**706.3 Roof replacement.** Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.

**Exception:** Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional

**706.3.1 Roof recover.** The installation of a new roof covering over an existing roof covering shall be permitted where any of the following conditions occur:

1. Where the new roof covering is installed in accordance with the roof covering manufacturer's approved instructions.
2. Complete and separate roofing systems, such as standing-seam metal roof panel systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
3. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 706.4.
4. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear off of existing roof coverings.

**706.3.1.1 Exceptions.** A roof recover shall not be permitted where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

**Reason:**

**Kulik** - This proposal is simply editorial and matches the IEBC Reroofing sections with the IBC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2014 and 2015 the BCAC has held 5 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: [BCAC](#)

**Traxler** - Section 706 was added to the IEBC last code cycle by EB23-13 which copied Section 1510 from the 2012 IBC into the IEBC. However, revisions to the IBC Section that had also been approved last code cycle were not included. This proposal makes IEBC Section 706 identical to IBC Section 1511. ("Reroofing" was Section 1510 in the 2012 IBC, and is Section 1511 in the 2015 IBC.)

**Cost Impact:** Will not increase the cost of construction

Since this proposal is intended to be editorial to coordinate the IEBC reroofing sections with the IBC there will be no increase in the cost of construction.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal coordinates the reroofing provisions of the IEBC with the IBC by incorporating the revisions made to the IBC during the last cycle.

**Assembly Action:**

**None**

**Final Action Results**

**EB46-16**

**AS**

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## Code Change No: **EB48-16**

### Original Proposal

#### Section: [BS] 907.1

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

#### Revise as follows:

**[BS] 907.1 General.** Where buildings are undergoing Level 3 ~~alterations including structural alterations~~, the provisions of this section shall apply.

**Reason:** This proposal clarifies the intended application of section 907. As written, 907 applies to "Level 3 alterations including structural alterations." This wording is unclear:

- Does it mean that 907 applies only to Level 3 alterations that happen to include major structural work?
- Or does it mean that all "structural alterations" should always be considered Level 3 Alterations to which 907 generally applies?

Certainly the second choice is incorrect, as that meaning would improperly re-define what it means to be a Level 3 Alteration. It would be wrong to say that moving one post or cutting one hole should be deemed Level 3.

But even the first choice fails to reflect most users' expectation that 907 applies to any Level 3 project whether or not the intended work involves any structural alteration. Certainly this was the understanding when the proactive provisions in 907.4.3, 907.4.5, and 907.4.6 were added. Those provisions recognize that when a building gets essentially a new life through an extensive renovation, some basic structural mitigation should be triggered. It makes no sense, and it destroys the intent of these sensible provisions, to say that they can be avoided by restricting the scope of your major alteration project to architectural, accessibility, mechanical, electrical, cladding, and energy conservation improvements.

This proposal deletes the three problematic words, eliminating confusion and confirming the applicability of 907.4.3, 907.4.5, and 907.4.6.

Are there any implications to the rest of 907, specifically to 907.4.2 and 907.4.4, which address the structural systems as a whole? Answer: No. With respect to these provisions, the question of whether 907 applies to alterations with or without structural scope is moot. Consider:

- Assume 907 is meant to apply only to Level 3 Alterations with structural scope. Then a project with structural scope would trigger upgrade by 907.4.2 if the scope was SSA, and would not trigger upgrade otherwise. The lesser structural scope would still have to comply with Chapter 8 (per 907.4.4).
- Now assume that 907 is meant to apply as proposed, to all Level 3 Alterations, with or without structural scope. If there is structural scope, then the result is the same as in the previous assumption. If there is no structural scope, then you get the same result (i.e. comply with Chapter 8) as in the previous assumption with less than SSA.

The same result means the question is moot, so the proposal has no effect on the SSA trigger at the heart of Section 907. Now, with this proposal, 907.1 would read, "Where buildings are undergoing Level 3 alterations, the provisions of this section shall apply." This is harmless, but one might also argue that it is unnecessary, since Section 907, by being in Chapter 9, already applies to any Level 3 Alteration by definition. So we are open to a modification that simply deletes Section 907.1 in its entirety.

**Cost Impact:** Will not increase the cost of construction  
This is a clarification of current intent so there is no change to construction requirements.

**Report of Committee Action  
Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This code change clarifies the IEBC by removing confusing verbiage, because it is agreed that level 3 alterations should require compliance with Section 907.

**Assembly Action:**

**None**

**Final Action Results**

**EB48-16**

**AS**

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## Code Change No: **EB49-16**

### Original Proposal

**Section:** [BS] 907.2, [BS] 907.3, [BS] 907.4, [BS] 907.4.1, [BS] 907.4.2, [BS] 907.4.3, [BS] 907.4.4, [BS] 907.4.5, [BS] 907.4.6.

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Delete without substitution:**

~~**[BS] 907.2 New structural elements.** New structural elements shall comply with Section 807.2.~~

~~**[BS] 907.3 Existing structural elements carrying gravity loads.** Existing structural elements carrying gravity loads shall comply with Section 807.4.~~

**Revise as follows:**

~~**[BS] 907.4 Existing structural elements resisting lateral loads**~~ **load-resisting system.** All existing elements ~~Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural alteration within a 5-year period, the lateral force-resisting load-resisting system of the altered building shall comply with this section.~~ be shown to satisfy the requirements of Sections 1609 and 1613 of the *International Building Code*. Reduced *International Building Code*-level seismic forces shall be permitted. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.

**Exceptions:**

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light frame construction methods of the *International Building Code* or in compliance with the provisions of the *International Residential Code*.
2. ~~Where such alterations involve the intended alteration involves only the lowest story of a building and the change of occupancy provisions in Chapter 10 do not apply,~~ only the lateral force resisting components in and below that story need comply with this section.

**Delete without substitution:**

~~**[BS] 907.4.1 Evaluation and analysis.** An engineering evaluation and analysis that establishes the structural adequacy of the altered structure shall be prepared by a registered design professional and submitted to the code official.~~

~~**[BS] 907.4.2 Substantial structural alteration.** Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural alteration within a 5-year period, the evaluation and analysis shall demonstrate that the lateral load-resisting system of the altered building or structure complies with the *International Building Code* for wind loading and with~~

~~reduced *International Building Code*-level seismic forces in accordance with Section 301.1.4.2. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.~~

**Revise as follows:**

**[BS] 907.4.3-907.5 Seismic Design Category F.** Where the building is assigned to Seismic Design Category F, the evaluation and analysis shall demonstrate that the lateral load-resisting system of the altered building or structure complies with reduced *International Building Code*-level seismic forces in accordance with Section 301.1.4.2 and with the wind provisions ~~applicable to a limited structural alteration of the International Building Code.~~

**Delete without substitution:**

~~**[BS] 907.4.4 Limited structural alteration.** Where the work does not involve a substantial structural alteration and the building is not assigned to Seismic Design Category F, the existing elements of the lateral load-resisting system shall comply with Section 807.5.~~

**Revise as follows:**

**[BS] 907.4.5-907.6 Wall anchors for concrete and masonry buildings.** *No change to text.*

**[BS] 907.4.6-907.7 Bracing for unreinforced masonry parapets.** *No change to text.*

**Reason:** This proposal simplifies Section 907, removing duplication and clarifying the intent. Here is the current intent of Section 907, retained but clarified by this proposal:

- Section 907 applies to any Level 3 alteration, whether or not the intended work involves structural elements (this will be confirmed and clarified by a separate proposal).
- If the intended alteration involves a Substantial Structural Alteration (SSA), the lateral system must be evaluated for wind and reduced seismic loads. If deficient, the lateral system must be retrofitted. (current 907.4.1 and 907.4.2)
  - Small residential buildings are exempt if altered by light frame provisions or IRC. (907.4 Exc 1)
  - Retrofit above the first story is not required if the intended alteration is to the first story only. (907.4 Exc 2)
- If the intended alteration does NOT involve SSA, then only the Level 2 Alteration structural provisions apply, except for the special cases in the following bullets. (907.2, 907.3, 907.4.4)
- In addition to the overall lateral system assessment based on SSA, the following proactive mitigations apply to all Level 3 alterations. The two exceptions in 907.4 do NOT apply, as these pre-dated the following proactive provisions:
  - Essential facilities in high seismic areas (SDC F) shall be evaluated, and retrofitted if deficient. (907.4.3)
  - In certain vulnerable buildings in moderate or high seismic areas, roof-to-wall anchors shall be provided. (907.4.5)
  - In moderate or high seismic areas, URM parapets shall be braced. (907.4.6)

Based on the foregoing intent, this proposal makes the following clarifying and editorial revisions:

Current 907.1: Revise by separate proposal. The words "including structural alterations" are problematic, but they can be left as is for purposes of this reorganization.

Current 907.2: Delete. Unnecessary, since per 505.2 and 901.2, structural provisions for Level 2 Alterations already apply.

Current 907.3: Delete. Unnecessary, since per 505.2 and 901.2, structural provisions for Level 2 Alterations already apply.

Current 907.4: Retain the exceptions, but otherwise combine with current 907.4.2. In exception 2, delete the unnecessary phrase about "change of occupancy provisions." This phrase means to say that the exception is overruled by any applicable change of occupancy trigger, but it is not necessary to say that because in the IEBC, provisions for each project type apply independently and cumulatively.

Current 907.4.1: Delete. This is the only part of the proposal that might (but, we submit, does not) represent a substantive change. A plain reading suggests that 907.4.1 requires a full structural evaluation (lateral and gravity, all load cases) for any Level 3 Alt (or at least for any Level 3 Alt that involves any structural work, depending on how you read 907.1). We submit that was never the intent. Rather, "evaluation and analysis that establishes the structural adequacy of the altered structure," should be read to mean "establishes which of the subsections to follow, 907.4.2 or 907.4.4, applies, and confirms that the work will satisfy them." In other words, 907.4.1 really means only that you have demonstrate compliance with the appropriate provisions. Since this is always true, this requirement can be deleted. (Alternatively, if you believe that 907.4.1 really does intend to require submittal and approval of a full structural evaluation report for every Level 3 Alt project, then the provision is incomplete and unclear; the code can make such a requirement, but it will need much clearer triggers, scope, and criteria.)

Current 907.4.2: Retain, combined with the exceptions of 907.4.  
Current 907.4.3: Retain, but renumber as 907.X, since this proactive measure applies regardless of SSA and without the 907.4 exceptions. The last sentence of current 907.4.3 refers to "limited structural alteration," an unnecessary term used only in current 907.4.4. Since 907.4.4 is being deleted as unnecessary, the wording is changed to what the requirement actually is, which is simply the full wind loads of IBC Section 1609.  
Current 907.4.4: Delete. Unnecessary, since per 505.2 and 901.2, structural provisions for Level 2 Alterations already apply.  
Current 907.4.5: Retain, but renumber as 907.Y, since this proactive measure applies regardless of SSA and without the 907.4 exceptions.  
Current 907.4.6: Retain, but renumber as 907.Z, since this proactive measure applies regardless of SSA and without the 907.4 exceptions.

**Cost Impact:** Will not increase the cost of construction  
This is an editorial clarification of current intent, therefore there will be not change in construction requirements.

**Report of Committee Action  
Hearings**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The committee agreed that this code change provides needed clarifications, simplifications and reorganization of Section IEBC 907.

**Assembly Action:** **None**

**Final Action Results**

**EB49-16**

**AS**

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## Code Change No: **EB50-16**

### Original Proposal

**Section: 202 (New), [BS] 1007.1, [BS] 1007.2, [BS] 1007.3.2**

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Add new definition as follows:**

**RISK CATEGORY.** A categorization of buildings and other structures for determination of flood, wind, snow, ice and earthquake loads based on the risk associated with unacceptable performance, as provided in Section 1604.5 of the *International Building Code*.

**Revise as follows:**

**[BS] 1007.1 Gravity Live loads.** ~~Buildings or portions thereof subject to~~ Structural elements carrying tributary live loads from an area with a change of occupancy where such change in shall satisfy the nature requirements of occupancy results in higher uniform or concentrated loads based on Table 1607.1 of the *International Building Code* shall comply with the gravity load provisions Section 1607 of the *International Building Code*. Design live loads for areas of new occupancy shall be based on Section 1607 of the *International Building Code*. Design live loads for other areas shall be permitted to use previously approved design live loads.

**Exception:** ~~Structural elements whose stress is not increased by more than 5 percent. Structural elements whose demand-capacity ratio considering the change of occupancy is not more than 5 percent greater than the demand-capacity ratio based on previously approved live loads need not comply with this section.~~

**[BS] 1007.2 Snow and wind loads.** ~~Buildings and structures subject to~~ When a change of occupancy where such change in the nature of occupancy results in a structure being assigned to a higher wind or snow risk categories based on Table 1604.5 category, the structure shall satisfy the requirements of Sections 1608 and 1609 of the *International Building Code* shall be analyzed and shall comply with for the applicable wind or snow load provisions of the *International Building Code* new risk category.

**Exception:** ~~Where the new occupancy with a higher risk category is less than or equal to 10 percent of the total building floor area. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception. Where the area of the new occupancy is less than 10 percent of the building area, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.~~

**[BS] 1007.3.2 Access to Risk Category IV.** ~~Where a change of occupancy is such Any structure that compliance with Section 1007.3.1 is required and the building is provides operational access to an adjacent structure assigned to Risk Category IV, as the operational access to the building result of a change of occupancy shall not be through an adjacent structure, unless that structure conforms to itself satisfy the requirements of Section 1613 of the *International Building Code* for Risk Category IV structures using *International Building Code*-level seismic forces. Where operational access to the Risk~~

Category IV structure is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided by the owner of the Risk Category IV structure.

**Reason:** This proposal makes editorial changes for consistency, clarity, and simplification. The revisions use the preferred wording and logic approved for other sections in recent code cycles, so as to make the structural provisions more uniformly understandable and enforceable throughout the IEBC. The revisions by section:

202:

- Add the definition of Risk Category, identical to that provided in the IBC, but with reference to IBC Section 1604.5. This makes it unnecessary to refer repeatedly to Table 1604.5 and other rules for mixed occupancies and risk categories.

1007.1:

- Change title to Live loads. The code does not define "gravity loads," which could be construed to include snow and rain. More important, any change in dead load would indicate an alteration, not a change of occupancy.
- There is no need to determine whether the CoO has increased the design live loads. Instead, just design for the new design loads and use the 5% exception where it applies. This is the effect of the current provision in any case. More important, we believe it is not the intent of the code to permit a new occupancy in an under-designed space. Therefore, to compare the Table 1607.1 design loads for the new occupancy and the previous occupancy might not be sufficient if the actual structure was designed originally for much smaller design live loads than Table 1607.1 would require today.
- The allowance for "previously approved design live loads" outside the Change of Occupancy area is consistent with the allowance for alterations in 807.3 and 403.3.1.
- The 5 percent rule is retained, with the comparison clarified.

1007.2:

- Update the wording. There is no longer a "wind or snow risk category."
- Retain the 10% exception for a small area of changed occupancy. Note that 1007.3.1 allows this exception only for a change to RC II or III, not to RC IV. If that is sensible for seismic loads, it is probably also sensible for wind and snow, but this proposal is meant to be editorial only.

1007.3 and 1007.3.1: No changes proposed here. Since the Prescriptive method has a similar seismic provision (but no wind, snow, or live load provision yet), editorial revisions to 1007.3 and 1007.3.1 will be proposed separately in tandem with revisions to 407.4

1007.3.2:

- Clarify the logic.
- Clarify the applicable seismic criteria consistent with similar sections.
- Delete the reference to the owner. The owner or permit applicant is always responsible for compliance; there is nothing about this provision that requires a special charge to the owner.

**Cost Impact:** Will not increase the cost of construction

This is an editorial change, so there will be no change to construction requirements.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** Agreement with the proponent's reason which indicates this proposal clarifies the structural provisions of the IEBC with the added definition of "risk category" that is drawn from the IBC. These changes, which are primarily editorial, make the IEBC provisions more understandable and enforceable.

**Assembly Action:**

**None**

### Final Action Results

**EB50-16**

**AS**

**Code Change No: EB51-16**

**Original Proposal**

**Section:** [BS] 1007.2

**Proponent:** Kathleen Petrie, representing City of Seattle, Department of Planning and Development (kathleen.petrie@seattle.gov)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 1007.2 Snow and wind loads.** Buildings and structures subject to a *change of occupancy* where such change in the nature of occupancy results in higher ~~wind or snow~~ risk categories based on Table 1604.5 of the *International Building Code* shall be analyzed and shall comply with the applicable wind or snow load provisions of the *International Building Code*.

**Exception:** Where the new occupancy with a higher risk category is less than or equal to 10 percent of the total building floor area. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.

**Reason:** Table 1604.5 of the IBC is not about wind or snow categories; it is entitled "Risk Category of Buildings and Other Structures". To say that a change in the nature of the occupancy results in a higher wind or snow category is inaccurate, so this proposal deletes that language.

**Cost Impact:** Will not increase the cost of construction  
The proposed modification does not change the requirement, so cost is not impacted

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal corrects a mistake in the current reference to risk categories.

**Assembly Action:**

**None**

**Final Action Results**

**EB51-16**

**AS**

## Code Change No: **EB52-16**

### Original Proposal

**Section:** [BS] 1007.3, [BS] 1007.3.1, [BS] 1007.3.2

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Delete without substitution:**

~~**[BS] 1007.3 Seismic loads.** Existing buildings with a change of occupancy shall comply with the seismic provisions of Sections 1007.3.1 and 1007.3.2.~~

**Revise as follows:**

**[BS] 1007.3 Seismic loads.** ~~Existing buildings with~~ Where a building or portion thereof is subject to a change of occupancy that results in the building being assigned to a higher risk category based on Table 1604.5 of the *International Building Code*, the building shall comply with the requirements for *International Building Code*-level seismic provisions of Sections 1007.3.1 and 1007.3.2 forces as specified in Section 301.1.4.1 for the new risk category.

**Exceptions:**

1. Where approved by the code official, specific detailing provisions required for a new structure are not required to be met where it can be shown that an equivalent level of performance and seismic safety is obtained for the applicable risk category based on the provision for reduced *International Building Code*-level seismic forces as specified in Section 301.1.4.2.
2. Where the area of the new occupancy with a higher hazard category is less than or equal to 10 percent of the total building floor area and the new occupancy is not classified as Risk Category IV. For the purposes of this exception, buildings occupied by two or more occupancies not included in the same risk category, shall be subject to the provisions of Section 1604.5.1 of the *International Building Code*. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.
3. Unreinforced masonry bearing wall buildings in Risk Category III when assigned to Seismic Design Category A or B shall be allowed to be strengthened to meet the requirements of Appendix Chapter A1 of this code [Guidelines for the Seismic Retrofit of Existing Buildings (GSREB)].

~~**[BS] 1007.3.2 1007.4 Access to Risk Category IV.** Where Any structure that provides operational access to an adjacent structure assigned to risk category IV as the result of a change of occupancy is such that change of occupancy shall itself satisfy the requirements of Sections 1608, 1609, and 1613 of the *International Building Code*. For compliance with Section 1007.3.1 is required and the building is assigned to Risk Category IV 1613, the *International Building Code*-level seismic forces shall be used. Where operational access to the building shall not be through an adjacent structure, unless that structure conforms to the requirements for Risk Category IV structures. Where operational access structure is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided by the owner of the Risk Category IV structure.~~

**Reason:** This proposal makes Section 1007.3.2 more general. It recognizes that access to a newly reclassified Risk Category IV building is important with respect to wind and snow damage as well as earthquake damage.

By re-numbering 1007.3.2 as its own section, it will now apply to more than just seismic loads. Hence the additional edits. Once current 1007.3.2 becomes 1007.4, the current introductory section 1007.3 is no longer needed and should be deleted, and the renumbered section 1007.3.1 should be re-titled just "Seismic loads" for consistency with 1007.1 and 1007.2.

**Cost Impact:** Will increase the cost of construction

In the rare cases where an existing RC I, II or III building is reclassified to RC IV and is served by an adjacent RC I, II, or III structure, this proposal might lead to increase costs to improve resistance to wind and snow.

<b>Report of Committee Action Hearings</b>
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**Committee Action:**

**Approved as Submitted**

**Committee Reason:** In addition to cleaning up the terminology in these sections, changing the requirement for access to Risk Category IV buildings is appropriate for all loading provision, not just earthquake.

**Assembly Action:**

**None**

<b>Final Action Results</b>
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**EB52-16**

**AS**

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## Code Change No: **EB53-16**

### Original Proposal

**Section:** [BS] 1103.1, [BS] 1103.3.3

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Delete without substitution:**

~~**[BS] 1103.1 Compliance with the International Building Code.** Additions to existing buildings or structures are new construction and shall comply with the *International Building Code*.~~

~~**[BS] 1103.3.3 Voluntary addition of structural elements to improve the lateral force-resisting system.** Voluntary addition of structural elements to improve the lateral force-resisting system of an *existing building* shall comply with Section 807.6.~~

**Reason:** This proposal removes two small sections that are entirely redundant.

Current 1103.1 is redundant with respect to 1101.1.

Current 1103.3.3 is redundant with respect to 807.6, to which it points. In addition, 1103.3.3 should be removed from Chapter 11 because "addition of structural elements" is not about Additions.

**Cost Impact:** Will not increase the cost of construction

This proposal is editorial, so there will be no change in construction requirements.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** As proponent's reason points out this code change removes two code sections under additions that are not needed. The first one [1103.1] is redundant and the second [1103.3.3] is not appropriate under additions. .

**Assembly Action:**

**None**

### Final Action Results

**EB53-16**

**AS**

**Code Change No: EB54-16**

**Original Proposal**

**Section:** [BS] 1201.2

**Proponent:** Gwenyth Searer, Wiss, Janney, Elstner Associates, Inc.

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] 1201.2 Report.** A historic building undergoing ~~repair alteration~~, or change of occupancy shall be investigated and evaluated. If it is intended that the building meet the requirements of this chapter, a written report shall be prepared and filed with the code official by a registered design professional when such a report is necessary in the opinion of the code official. Such report shall be in accordance with Chapter 1 and shall identify each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be prepared. Additionally, the report shall describe each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.

**Reason:** There is no need for a report regarding the safety features or the lateral force resisting systems of a historic building in the event of a repair to a historic building. According to Section 601.1, repairs need only comply with Chapter 12; this wording effectively bypasses all of the upgrade triggers in Chapter 6. Furthermore, according to Section 1202.1, repairs shall be permitted with original or like materials and original methods of construction, and according to Section 1202.4, replacement of existing or missing features using original materials shall be permitted.

In short, all of the existing language that governs repairs of historic buildings specifically excludes triggering of upgrades; thus a report that details all of the non-conformances of the safety features and lateral force resisting system is not needed. Furthermore, the requirement in 1201.2 that mandates the report list each feature of the historic building that is not in compliance with "these provisions" and requires demonstration of "how the intent of these provisions is complied with" is contradictory and confusing when it comes to repairs. Including repairs in the requirements of Section 1201.2 is thus both circular and confusing.

**Cost Impact:** Will not increase the cost of construction  
This is an editorial change that will either not affect the cost of construction, or may lower it slightly because reports that are not required will not be mandated

**Report of Committee Action Hearings**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The committee agrees that the report required by Section 1201.2 for historic buildings may be needed for some repairs but it should not be required for all repairs.

**Assembly Action:**

**None**

**Final Action Results**

**EB54-16**

**AS**

Code Change No: <b>EB58-16</b>
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Original Proposal
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**Section(s):** APPENDIX A, Chapter A1, Chapter A6

**Proponent:** David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.**

**Revise as follows:**

**[BS] A102.1 General.** The provisions of this chapter shall apply to all existing buildings not more than six stories in height above the base of the structure and having at least one unreinforced masonry bearing wall. The elements regulated by this chapter shall be determined in accordance with Table A1-A. Except as provided herein, other structural provisions of the building code shall apply. This chapter does not apply to the *alteration* of existing electrical, plumbing, mechanical or fire safety systems.

**Add new definition as follows:**

**BED JOINT.** The horizontal layer of mortar on which a masonry unit is laid.

**Revise as follows:**

**[BS] CROSSWALL.** A new or existing wall that meets the requirements of Section A111.3 ~~and the definition of Section A111.3.~~ A crosswall is not a shear wall.

**Add new definition as follows:**

**DETAILED BUILDING SYSTEM ELEMENTS.** The localized elements and the inter-connections of these elements that define the design of the building.

**Revise as follows:**

**[BS] FLEXIBLE DIAPHRAGM.** A diaphragm of wood or untopped metal deck construction in which the horizontal deformation along its length is at least two times the average story drift.

**Add new definition as follows:**

**HEAD JOINT.** The vertical mortar joint placed between masonry units within the wythe.

**Revise as follows:**

**[BS] OPEN FRONT.** An exterior building wall line on one side only without vertical elements of the ~~lateral seismic~~ force-resisting system in one or more stories.

**[BS] RIGID DIAPHRAGM.** A diaphragm of concrete construction or concrete filled metal deck construction.



**[BS] UNREINFORCED MASONRY (URM).** Includes burned clay, concrete or sand-lime brick; hollow clay or concrete block; plain concrete; and hollow clay tile. These materials shall comply with the requirements of Section A106 as applicable.

**[BS] UNREINFORCED MASONRY (URM)-WALL.** A masonry wall that relies on the tensile strength of masonry units, mortar and grout in resisting design loads, and in which the area of reinforcement is less than 25 percent of the minimum ratio required by the building code amounts as defined for reinforced masonry walls.

**[BS] UNREINFORCED MASONRY BEARING WALL.** A URM wall that provides the vertical support for the reaction of floor or roof-framing members for which the total superimposed vertical load exceeds 100 lbs. per linear foot of wall length.

## SECTION A104 SYMBOLS AND NOTATIONS

For the purpose of this chapter, the following notations supplement the applicable symbols and notations in the building code.

$a_n$	=	Diameter of core multiplied by its length or the area of the side of a square prism.
$A$	=	Cross-sectional area of unreinforced masonry pier or wall, square inches ( $10^{-6} \text{ m}^2$ ).
$A_b$	=	Total area of the bed joints above and below the test specimen for each in-place shear test, square inches ( $10^{-6} \text{ m}^2$ ).
$A_n$	=	<u>Area of net mortared or grouted section of a wall or wall pier</u>
$D$	=	In-plane width dimension of pier, inches ( $10^{-3} \text{ m}$ ), or depth of diaphragm, feet (m).
$DCR$	=	Demand-capacity ratio specified in Section A111.4.2.
$f'_m$	=	<del>Compressive</del> <u>Lower bound masonry compressive strength of masonry.</u>
$f_{sp}$	=	Tensile-splitting strength of masonry.
$F_{wx}$	=	Force applied to a wall at level x, pounds (N).
$H$	=	Least clear height of opening on either side of a pier, inches ( $10^{-3} \text{ m}$ ).
$h/t$	=	Height-to-thickness ratio of URM wall. Height, h, is measured between wall anchorage levels and/or slab-on-grade
$L$	=	Span of diaphragm between shear walls, or span between shear wall and open front, feet (m).
$L_c$	=	Length of crosswall, feet (m).
$L_i$	=	Effective <u>diaphragm</u> span for an open-front building specified in Section A111.8, feet (m).

$P$	=	Applied force as determined by standard test method of ASTM C 496 or ASTM E 519, pounds (N).
$P_D$	=	Superimposed dead load at the location under consideration, pounds (kN). For determination of the rocking shear capacity, dead load at the top of the pier under consideration shall be used.
$P_{D+L}$	=	<del>Press</del> <u>Stress</u> resulting from the dead plus actual live load in place at the time of testing, pounds per square inch (kPa).
$P_{test}$	$\equiv$	<u>Splitting tensile test load determined by standard test method ASTM C496, pounds (N)</u>
$P_w$	=	Weight of wall, pounds (N).
$R$	=	Response modification factor for Ordinary plain masonry shear walls in Bearing Wall System from Table 12.2-1 of ASCE 7, where $R = 1.5$ .
$SDS$	=	Design spectral acceleration at short period, in g units.-
$SD4DS$	=	Design spectral acceleration at <del>4-second</del> <u>short</u> period, in g units.
$SD1$	$\equiv$	<u>Design spectral acceleration at 1-second period, in g units.</u>
$v_a$	=	The shear strength of any URM pier, $v_m A/1.5$ pounds (N).
$v_c$	=	Unit shear <del>capacity value</del> <u>strength</u> for a crosswall sheathed with any of the materials given in Table A1-D or A1-E, pounds per foot (N/m).
$v_m$	=	Shear strength of unreinforced masonry, pounds per square inch (kPa).
$V_{aa}$	=	The shear strength of any URM pier or wall, pounds (N).
$V_{ea}$	=	Total shear capacity of crosswalls in the direction of analysis immediately above the diaphragm level being investigated, <del><math>v_c L_c</math>, pounds (N).</del>
<del><math>V_{eba}</math></del>	=	Total shear capacity of crosswalls in the direction of analysis immediately <del>below</del> <u>above</u> the diaphragm level being investigated, $v_c L_{c,T}$ pounds (N).
<u><math>V_{cb}</math></u>	$\equiv$	<u>Total shear capacity of crosswalls in the direction of analysis immediately below the diaphragm level being investigated, <math>v_c L_c</math>, pounds (N).</u>
$V_p$	=	Shear force assigned to a pier on the basis of its relative shear rigidity, pounds (N).
$V_r$	=	Pier rocking shear capacity of any URM wall or wall pier, pounds (N).
$v_t$	=	Mortar shear strength as specified in Section A106.3.3.5, pounds per square inch (kPa).-
$V_{test}$	=	Load at incipient cracking for each in-place shear test performed in accordance with Section A106.3.3.1, pounds (kN).-

$v_{tet}$	=	Mortar ( <u>bed joint</u> ) shear <del>test values</del> <u>strength</u> as specified in Section A106.3.3.5, pounds per square inch (kPa).
$V_{test}$	$\equiv$	<u>Load at incipient cracking for each in-place shear test performed in accordance with Section A106.3.3.1, pounds (kN).</u>
$V_{tL}$	$\equiv$	<u>Lower bound mortar shear strength, pounds per square inch (kPa)</u>
$v_{to}$	$\equiv$	<u>Mortar shear test values as specified in Section A106.3.3.5, pounds per square inch (kPa).</u>
$v_u$	=	Unit shear capacity value for a diaphragm sheathed with any of the materials given in Table A1-D or A1-E, pounds per foot (N/m).
$V_{wx}$	=	Total shear force resisted by a shear wall at the level under consideration, pounds (N).
$W$	=	Total seismic dead load as defined in the building code, pounds (N).
$W_d$	=	Total dead load tributary to a diaphragm level, pounds (N).
$W_w$	=	Total dead load of a URM wall above the level under consideration or above an open-front building, pounds (N).
$W_{wx}$	=	Dead load of a URM wall assigned to level x halfway above and below the level under consideration, pounds (N).
$\Sigma v_u D$	=	Sum of diaphragm shear capacities of both ends of the diaphragm, pounds (N).
$v_u D$	=	For diaphragms coupled with crosswalls, $v_u D$ includes the sum of shear capacities of both ends of diaphragms coupled at and above the level under consideration, pounds (N).
$\Sigma W_d$	=	Total dead load of all the diaphragms at and above the level under consideration, pounds (N).

## SECTION A105 GENERAL REQUIREMENTS

**[BS] A105.1 General.** The seismic force-resisting system specified in this chapter shall comply with the building code and referenced standards, except as modified herein.

**[BS] A105.3 Requirements for plans.** The following construction information shall be included in the plans required by this chapter:

1. Dimensioned floor and roof plans showing existing walls and the size and spacing of floor and roof-framing members and sheathing materials. The plans shall indicate all existing and URM walls, new crosswalls and shear walls, and their materials of construction. The location of these walls and their openings shall be fully dimensioned and drawn to scale on the plans.
2. Dimensioned URM wall elevations showing openings, piers, wall classes as defined in Section A106.3.3.8, thickness, heights, wall shear test locations, cracks or damaged portions requiring repairs, the general condition of the mortar joints, and if and where pointing is required. Where the exterior face is veneer, the type of veneer, its thickness and its bonding and/or ties to the structural wall masonry shall also be noted.

3. The type of interior wall and ceiling materials, and framing.
4. The extent and type of existing wall anchorage to floors and roof when used in the design.
5. The extent and type of parapet corrections that were previously performed, if any.
6. *Repair* details, if any, of cracked or damaged unreinforced masonry walls required to resist forces specified in this chapter.
7. All other plans, sections and details necessary to delineate required retrofit construction.
8. The design procedure used shall be stated on both the plans and the permit application.
9. Details of the anchor prequalification program required by Section A107.5.3, if used, including location and results of all tests.
10. Construction quality assurance requirements of special inspection for all new construction materials and for retrofit construction including: anchor tests, pointing or repointing of mortar joints, installation of adhesive or mechanical anchors, and other elements as deemed necessary to ensure compliance with this Appendix.

**[BS] A105.4 Structural observation, testing and inspection.** Structural observation, in accordance with Section ~~1708~~1704.5 of the *International Building Code*, shall be required for all structures in which seismic retrofit is being performed in accordance with this chapter. Structural observation shall include visual observation of work for conformance with the approved construction documents and confirmation of existing conditions assumed during design.

Structural testing and inspection for new and existing construction materials shall be in accordance with the building code, except as modified by this chapter.

Special inspection as described in Section A105.3 Item 10 shall be provided equivalent to Level 3 as prescribed in TMS 402 Table 3.1(2), Minimum *Special Inspection Requirements*.

## SECTION A106 MATERIALS REQUIREMENTS

**Delete without substitution:**

~~**[BS] A106.1 General.** Materials permitted by this chapter, including their appropriate strength design values and those existing configurations of materials specified herein, may be used to meet the requirements of this chapter.~~

**Delete and substitute as follows:**

~~**[BS] A106.2 A106.1 Condition of Existing materials.** Existing materials used as part of the required vertical load-carrying or lateral force-resisting system shall be in sound condition, or shall be repaired or removed and replaced with new materials. All other unreinforced masonry materials shall comply with the following requirements:~~

1. The lay-up of the masonry units shall comply with Section A106.3.2, and the quality of bond between the units has been verified to the satisfaction of the building official;
2. Concrete masonry units are verified to be load-bearing units complying with ASTM C 90 or such other standard as is acceptable to the building official; and
3. ~~The compressive strength of plain concrete walls shall be determined based on cores taken from each class of concrete wall. The location and number of tests shall be the same as those prescribed for tensile splitting strength tests in Sections A106.3.3.3 and A106.3.3.4, or in Section A108.1.~~

~~The use of materials not specified herein or in Section A108.1 shall be based on substantiating research data or engineering judgment, with the approval of the building official.~~

Existing materials used as part of the required vertical load-carrying or seismic force-resisting system shall be evaluated by on-site investigation and determined not to be in poor condition including degraded mortar, degraded masonry units, or significant cracking; or shall be repaired, enhanced, retrofitted or removed and replaced with new materials. Mortar joint deterioration shall be patched by pointing or re-pointing of the eroded joint in accordance with Section A106.2.3.9. Existing significant cracks in solid unit

unreinforced and in solid grouted hollow unit masonry shall be repaired by epoxy pressure injection and/or by fiber sheets bonded by epoxy to masonry surface.

Revise as follows:

**[BS] ~~A106.3~~A106.2 Existing unreinforced masonry.**

**[BS] ~~A106.3.1~~A106.2.1 General.** Unreinforced masonry walls used to carry support vertical loads or seismic forces parallel and perpendicular to the wall plane shall be tested as specified in this section. ~~All masonry~~ Masonry that does not meet the minimum ~~standards requirements~~ established by this chapter shall be repaired, enhanced, removed and replaced with new materials, or alternatively, shall have its structural functions replaced with new materials and shall be anchored to supporting elements.

**[BS] ~~A106.3.2~~A106.2.2 Lay-up of walls.** Unreinforced masonry walls shall be laid in a running bond pattern.

**[BS] ~~A106.3.2.1~~A106.2.2.1 Multiwythe Header in multi-wythe solid brick.** The facing and backing wythes of multi-wythe walls shall be bonded so that not less than 10 percent of the exposed face area is composed of solid headers extending not less than 4 inches (102 mm) into the backing wythes. The clear distance between adjacent ~~full length headers~~ header courses shall not exceed 24 inches (610 mm) vertically or horizontally. Where the backing consists of two or more wythes, the headers shall extend not less than 4 inches (102 mm) into the most distant wythe, or the backing wythes shall be bonded together with separate headers ~~with their for which the area and spacing conforming conform~~ to the foregoing. Wythes of walls not ~~bonded as described above meeting these requirements~~ shall be considered veneer. ~~Veneer wythes, and shall not be included in the effective thickness used in calculating the height-to-thickness ratio and the shear capacity strength~~ of the wall.

**Exception:** Where  $S_{D1}$  is ~~not more than 0.30~~ 0.3g or less, veneer wythes anchored ~~as specified in the building code~~ and made composite with backup masonry ~~may are permitted to be used for calculation of the effective thickness.~~

**[BS] ~~A106.3.2.2~~A106.2.2.2 Grouted or ungrouted hollow concrete or clay block Concrete masonry units and structural hollow clay load-bearing tile.** Grouted or ungrouted hollow concrete ~~masonry units shall be tested in accordance with ASTM C140. Grouted or ungrouted structural clay block and structural hollow clay load-bearing tile shall be laid tested in a running bond pattern accordance with ASTM C34.~~

**[BS] ~~A106.3.2.3~~A106.2.2.3 Other lay-up patterns.** Lay-up patterns other than those specified in Sections ~~A106.3.2.1 and A106.3.2.2 above are~~ Section A106.2.2.1 is allowed if their performance can be justified.

**[BS] ~~A106.3.3~~A106.2.3 Testing of masonry.**

Delete and substitute as follows:

**[BS] ~~A106.3.3.1~~A106.2.3.1 Mortar In-place mortar tests.** ~~The quality of mortar in all masonry walls shall be determined by performing in-place shear tests in accordance with the following:~~

- ~~1. The bed joints of the outer wythe of the masonry shall be tested in shear by laterally displacing a single brick relative to the adjacent bricks in the same wythe. The head joint opposite the loaded end of the test brick shall be carefully excavated and cleared. The brick adjacent to the loaded end of the test brick shall be carefully removed by sawing or drilling and excavating to provide space for a hydraulic ram and steel loading blocks. Steel blocks, the size of the end of the brick, shall be used on each end of the ram to distribute the load to the brick. The blocks shall not contact the mortar joints. The load shall be applied horizontally, in the plane of the wythe. The~~

load recorded at first movement of the test brick as indicated by spalling of the face of the mortar bed joints is  $V_{test}$  in Equation A1-3.

- Alternative procedures for testing shall be used where in-place testing is not practical because of crushing or other failure mode of the masonry unit (see Section A106.3.3.2).

Mortar shear test values,  $v_{to}$ , shall be obtained by one of the following:

- ASTM C1531.
- For masonry walls that have high shear strength mortar, or where in-place testing is not practical because of crushing or other failure mode of the masonry, alternative procedures for testing shall be used in accordance with Section A106.2.3.2.

Revise as follows:

**[BS] A106.3.3.2 A106.2.3.2 Alternative procedures for testing masonry.** The tensile-splitting strength of existing masonry,  $f_{sp}$ , or the prism strength of existing masonry,  $f'_m$ , may be determined in accordance with one of ASTM C496 and calculated by the following procedures equation:

- Wythes of solid masonry units shall be tested by sampling the masonry by drilled cores of not less than 8 inches (203 mm) in diameter. A bed joint intersection with a head joint shall be in the center of the core. The tensile-splitting strength of these cores should be determined by the standard test method of ASTM C 496. The core should be placed in the test apparatus with the bed joint 45 degrees (0.79 rad) from the horizontal. The tensile-splitting strength should be determined by the following equation:

$$f_{sp} = \frac{2P}{\pi a_n}$$

$$f_{sp} = \frac{2P_{test}}{\pi a_n}$$

(Equation A1-1)

- Hollow unit masonry constructed of through-the-wall units shall be tested by sampling the masonry by a sawn square prism of not less than 18 inches square (11 613 mm<sup>2</sup>). The tensile-splitting strength should be determined by the standard test method of ASTM E 519. The diagonal of the prism should be placed in a vertical position. The tensile-splitting strength should be determined by the following equation:

$$f_{sp} = \frac{0.494P}{a_n}$$

(Equation A1-2)

- An alternative to material testing is estimation of the  $f'_m$  of the existing masonry. This alternative should be limited to recently constructed masonry. The determination of  $f'_m$  requires that the unit correspond to a specification of the unit by an ASTM standard and classification of the mortar by type.

**[BS] A106.3.3.3 A106.2.3.3 Location of tests.** The shear tests shall be taken at locations representative of the mortar conditions throughout the entire building, taking into account variations in workmanship at different building height levels, variations in weathering of the exterior surfaces, and variations in the condition of the interior surfaces due to deterioration caused by leaks and condensation of water and/or

~~by the deleterious effects of other substances contained within the building. The exact test locations shall be determined at the building site by the engineer or architect registered design professional in responsible charge of the structural design work. An accurate record of all such tests and their locations in the building shall be recorded, and these results shall be submitted to the building department for approval as part of the structural analysis.~~

**[BS] A106.3.3.4 A106.2.3.4 Number of tests.** The minimum number of tests per masonry class shall be determined as follows:

1. At each of both the first and top stories, not less than two tests per wall or line of wall elements providing a common line of resistance to lateral seismic forces.
2. At each of all other stories, not less than one test per wall or line of wall elements providing a common line of resistance to lateral seismic forces.
3. In any case, not less than one test per 1,500 square feet (139.4 m<sup>2</sup>) of wall surface and not less than a total of eight tests.

**[BS] A106.3.3.5 A106.2.3.5 Minimum quality of mortar.**

1. Mortar shear test values,  $v_{to}$ , in pounds per square inch (kPa) shall be obtained for each in-place shear test in accordance with the following equation:

$$v_{to} = (V_{test}/A_b) - P_{D+L}$$

Where,  $V_{test}$  = Load at first observed movement;

$A_b$  = Total area of the bed joints above and below the test specimen;

$P_{D+L}$  = Stress resulting from actual dead plus live loads in place at the time of testing

2. Individual unreinforced masonry walls with more than 50% of mortar test values,  $v_{to}$  consistently less than 30 pounds per square inch (207 kPa) shall be entirely pointed prior to and retested retesting.
3. The lower-bound mortar shear strength,  $v_{L}$ , is the value in pounds per square inch (kPa) that is exceeded by 80 percent defined as the mean minus one standard deviation of the mortar shear test values,  $v_{to}$ .
4. Unreinforced masonry with mortar shear strength,  $v_{L}$  less than 30 pounds per square inch (207 kPa) shall be removed, pointed and retested or shall have its structural function replaced, and shall be anchored to supporting elements in accordance with Sections A106.3.1 and A113.8. When existing mortar in any wythe is pointed to increase its shear strength and is retested, the condition of the mortar in the adjacent bed joints of the inner wythe or wythes and the opposite outer wythe shall be examined for extent of deterioration. The shear strength of any wall class shall be no greater than that of the weakest wythe of that class.

**[BS] A106.3.3.6 A106.2.3.6 Minimum quality of masonry.**

- ~~1. The minimum average value of tensile-splitting strength determined by Equation A1-1 or A1-2 shall be 50 pounds per square inch (344.7 kPa). The minimum value of  $f'_m$  determined by categorization of the masonry units and mortar should be 1,000 pounds per square inch (6895 kPa).~~
1. The minimum average value of tensile-splitting strength,  $f_{sp}$ , as calculated by Equation A1-1 shall be 50 pounds per square inch (344.7 kPa).
2. Individual unreinforced masonry walls with average tensile-splitting strength,  $f_{sp}$ , of less than 50 pounds per square inch (344.7 kPa) shall be entirely pointed prior to retesting and retested.
3. Hollow unit unreinforced masonry walls with estimated prism compressive strength of less than 1,000 pounds per square inch (6895 kPa) shall be grouted to increase the average net area compressive strength.



4. The lower-bound mortar shear strength,  $f_{spl}$ , is defined as the mean minus one standard deviation of the tensile-splitting strength test values,  $f_{sp}$ .

**[BS] A106.3.3.7A106.2.3.7 Collar joints.** The collar joints shall be inspected at the test locations during each in-place shear test, and estimates of the percentage of ~~surfaces of the adjacent wythes~~ surfaces that are covered with mortar shall be reported along with the results of the in-place shear tests.

**[BS] A106.3.3.8A106.2.3.8 Unreinforced masonry classes.** Existing unreinforced masonry shall be categorized into one or more classes based on shear strength, quality of construction, state of *repair*, deterioration and weathering. A class shall be characterized by the ~~allowable masonry shear stress strength~~ determined in accordance with Section A108.2. Classes ~~shall be~~ are defined for whole walls, not for small areas of masonry within a wall. Discretion in the definition of classes of masonry is permitted to avoid unnecessary testing.

**[BS] A106.3.3.9A106.2.3.9 Pointing.** Deteriorated mortar joints in unreinforced masonry walls shall be pointed in accordance with the following requirements:

1. **Joint preparation.** ~~The deteriorated~~ Deteriorated mortar shall be cut out by means of a tothing chisel or non- impact power tool ~~to a depth at which~~ until sound mortar is reached ~~but to a depth of not less than  $3/4$  inch (19.1 mm) or twice the thickness of the joint, whichever is less, and 2 inches (50 mm) maximum.~~ Care shall be taken not to damage the ~~brick masonry~~ edges. After cutting is complete, all loose material shall be removed with a brush, air ~~stream~~ or water stream.
2. **Mortar preparation.** The mortar mix shall be proportioned as required by the ~~registered design professional construction specifications.~~ The pointing mortar shall be ~~prehydrated~~ prepared by first thoroughly mixing all ingredients dry and then mixing again, adding only enough water to produce a damp ~~workable-unworkable~~ mix ~~which will retain that~~ retains its form when pressed into a ball. The mortar shall be kept in a damp condition for not less than one hour and not more than  $1\frac{1}{2}$  hours for pre-hydration; then sufficient water shall be added to bring it to a workable consistency that for pointing, which is somewhat drier than conventional masonry mortar. Use mortar within one and two and one-half hours from its initial mixing.
3. **Packing.** The joint into which the mortar is to be packed shall be ~~damp-dampened~~ but without freestanding water. The mortar shall be tightly packed into the joint in layers not exceeding  $1/4$  inch (6.4 mm) ~~in depth~~ deep until it is filled; then it shall be tooled to a smooth surface to match the original profile.

Nothing shall prevent pointing of any ~~deteriorated~~ masonry wall joints before testing is performed in accordance with Section ~~A106.3.3A106.2.3~~, except as required in Section A107.1.

## SECTION A107 QUALITY CONTROL

**[BS] A107.3 Existing wall anchors.** Existing wall anchors used as all or part of the required tension anchors shall be tested in pullout according to Section A107.5.1. ~~The A~~ A minimum number of four anchors tested per floor shall be ~~four per floor tested in pullout, with a minimum of two tests at walls with joists framing into the wall and two tests at walls with joists parallel to the wall, but not less than 10 percent of the total number of existing tension anchors at each level.~~

**[BS] A107.4 New ~~bolts~~ wall anchors.** All new wall anchors embedded ~~bolts in URM walls~~ shall be subject to ~~periodic~~ special inspection ~~in accordance with the building code~~, prior to placement of the ~~bolt anchor~~ and grout or adhesive in the drilled hole. Five percent of all ~~bolts-anchors~~ that do not extend through the wall shall be subject to a direct-tension test, and an additional 20 percent shall be tested using a calibrated torque wrench. Testing shall be performed in accordance with Section A107.5. ~~New bolts that extend through the wall with steel plates on the far side of the wall need not be tested.~~

**Exception:** Special inspection ~~in accordance with the building code~~ may be provided during installation of new anchors ~~in lieu of testing.~~



All new wall anchors embedded bolts in URM walls resisting tension forces or a combination of tension and shear forces shall be subject to ~~periodic~~ special inspection in accordance with the building code, prior to placement of the ~~bolt anchor~~ and grout or adhesive in the drilled hole. Five percent of all ~~bolts anchors~~ resisting tension forces shall be subject to a direct-tension test, and an additional 20 percent shall be tested using a calibrated torque wrench. Testing shall be performed in accordance with Section A107.5.

**Exception:** New through bolts that extend through the wall with steel plates on the far side of the wall need not be tested.

**[BS] A107.5 Tests of anchors in unreinforced masonry walls.** Tests of anchors in unreinforced masonry walls shall be in accordance with Sections A107.5.1 through A107.5.4. Results of all tests shall be reported to the authority having jurisdiction. The report shall include the test results of maximum load for each test, pass-fail results and also include: corresponding anchor size and type, orientation of loading, details of the anchor installation, testing apparatus, and embedment, wall thickness, and joist orientation and proximity to the tested anchor.

**[BS] A107.5.1 Direct tension testing of existing anchors and new bolts anchors.** The test apparatus shall be supported by the masonry wall. The distance between the anchor test procedure for pre-qualification of tension and the test apparatus support shear anchors shall be not less than one-half the wall thickness for existing anchors and 75 percent of the embedment for new embedded bolts comply with ASTM E488. Existing wall anchors shall be given a preload of 300 pounds (1335 N) ~~prior to~~ before establishing a datum for recording elongation. The tension test load reported shall be recorded at  $1/8$  inch (3.2 mm) relative movement between the existing anchor and the adjacent masonry surface. New embedded tension ~~bolts anchors~~ shall be subject to a direct tension load of not less than 2.5 times the design load but not less than 1,500 pounds (6672 N) for five minutes ~~(10 percent deviation)~~.

**Exception:** Where obstructions occur, the distance between the anchor and the test apparatus support shall be not less than one-half the wall thickness for existing anchors and 75 percent of the embedment length for new embedded anchors.

**[BS] A107.5.2 Torque testing of new bolts anchors.** ~~Bolts Anchors~~ embedded in unreinforced masonry walls shall be tested using a torque-calibrated wrench to the following minimum torques:

$1/2$  -inch-diameter (12.7 mm) bolts: 40 foot pounds (54.2 N-m).

$5/8$  -inch-diameter (15.9 mm) bolts: 50 foot pounds (67.8 N-m).

$3/4$  -inch-diameter (19.1 mm) bolts: 60 foot pounds (81.3 N-m).

**[BS] A107.5.3 Prequalification test tests for bolts and other types of non-conforming anchors.** ~~This section ASTM E488 or the test procedure in Section A107.5.1 is applicable when it is desired permitted to use be used to determine tension or shear strength values for anchors greater than those permitted by Table A1-E. The direct tension test procedure set forth in Section A107.5.1 for existing anchors shall be used to determine the allowable tension values for new embedded through bolts, except that no preload is required. Bolts Anchors shall be installed in the same manner and using the same materials as will be used in the actual construction. A minimum of five tests for each bolt size and type shall be performed for each class of masonry in which they are proposed to be used. The allowable tension and shear strength values for such anchors shall be the lesser of the average ultimate load divided by a safety factor of 5.0 or the average load at which  $1/8$  inch (3.2 mm) elongation occurs for each size and type of bolt anchor and class of masonry.~~

The test procedure for prequalification of shear bolts shall comply with ASTM E 488 or another approved procedure.

The allowable values determined in this manner shall be permitted to exceed those set forth in Table A1-E.

Delete without substitution:

**[BS] A107.5.4 Reports.** Results of all tests shall be reported. The report shall include the test results as related to anchor size and type, orientation of loading, details of the anchor installation and embedment, wall thickness and joist orientation.

## SECTION A108 DESIGN STRENGTHS

Revise as follows:

**[BS] A108.1 Strength Values.**

1. Strength values for existing materials are given in Table A1-D and for new materials in Table A1-E.
2. Capacity reduction factors need not be used-
3. The use of new materials not specified herein shall be based on substantiating research data or engineering judgment, with the approval of the building official-
4. The strength reduction factor,  $\Phi$ , shall be taken equal to 1.0.
5. The use of materials not specified herein shall be subjected to the discretion and approval of the authority having jurisdiction.

**[BS] A108.2 Masonry shear strength.** The unreinforced masonry shear strength,  $v_m$ , shall be determined for each masonry class from one of the following equations:

1. ~~The~~ When testing is performed in accordance with section A106.2.3.1, the unreinforced masonry shear strength,  $v_{mL}$ , shall be determined by Equation A1-4 when the mortar shear strength has been determined by Section A106.3.3.1-A1-3:

$$v_{mL} = \frac{0.75 \left( 0.75 v_{tL} + \frac{P_D}{A_n} \right)}{1.5} \quad \text{---} \quad v_m = 0.56 v_t + \frac{0.75 P_D}{A} \quad \text{(Equation A1-4A1-3)}$$

2. The mortar shear strength values,  $v_{tL}$ , shall be determined in accordance with Section A106.3.3 A106.2.3.5.
3. ~~The~~ When alternate testing is performed in accordance with Section A106.2.3.2, unreinforced masonry shear,  $v_{mL}$ , shall be determined by Equation A1-5 when tensile splitting strength has been determined in accordance with Section A 106.3.3.2, Item 1 or 2A1-4.

c)  $v + 0.75 \frac{P_D}{A}$  (Equation A1-5A1-4)

3. ~~When  $f'_m$  has been estimated by categorization of the units and mortar in accordance with Section 2105.1 of the International Building Code, the unreinforced masonry shear strength,  $v_m$ , shall not exceed 200 pounds per square inch (1380 kPa) or the lesser of the following:~~

a) 2.5

$$v_{mL} = \frac{0.75 \left( f_{spt} + \frac{P_D}{A_n} \right)}{1.5} \quad \text{---}$$

- or  
b) 200 psi or

$$c) v + 0.75 \frac{P_D}{A}$$

(Equation A1-6)

For SI: 1 psi = 6.895 kPa-  
where:

v	=	62.5 psi (430 kPa) for running bond masonry not grouted solid.
v	=	100 psi (690 kPa) for running bond masonry grouted solid.
v	=	25 psi (170 kPa) for stack bond grouted solid

**[BS] A108.3 Masonry compression.** Where any increase in wall dead plus live load compression stress occurs, the maximum compression stress in unreinforced masonry,  $Q_G/A_n$ , shall not exceed 300 pounds per square inch (2070 kPa).

**[BS] A108.4 Masonry tension.** Unreinforced masonry shall be assumed to have no tensile capacity.

**[BS] A108.5 Existing Wall tension anchors.** The resistance values tension strength of the existing wall anchors shall be the average of the tension ~~tests of existing test values~~ for anchors having the same wall thickness and ~~joist framing~~ orientation.

**[BS] A108.6 Foundations.** For existing foundations, new total dead loads ~~may are permitted to be~~ increased over the existing dead load by 25 percent. New total dead load plus live load plus seismic forces may be increased over the existing dead load plus live load by 50 percent. Higher values may be justified only in conjunction with a geotechnical investigation.

## SECTION A109 ANALYSIS AND DESIGN PROCEDURE

**[BS] A109.1 General.** The elements of buildings hereby required to be analyzed are specified in Table A1-A.

**[BS] A109.2 Selection of procedure.** Buildings with rigid diaphragms shall be analyzed by the general procedure of Section A110, ~~which is based on the building code~~. Buildings with flexible diaphragms shall be analyzed by the general procedure or, when applicable, ~~may are permitted to be~~ analyzed by the special procedure of Section A111. ASCE 41 is permitted to be used as an alternate procedure for both rigid diaphragm or flexible diaphragm buildings.

## SECTION A110 GENERAL PROCEDURE

**[BS] A110.1 Minimum design lateral forces.** Buildings shall be analyzed to resist minimum lateral forces assumed to act nonconcurrently in the direction of each of the main axes of the structure in accordance with the following:

$$V = \frac{0.75 S_{DS} W}{R}$$

(Equation A1-7A1-5)

**[BS] A110.2 Lateral Seismic forces on elements of structures.** Parts and portions of a structure not covered in Section A110.3 shall be analyzed and designed per the current building code, using force levels defined in Section A110.1.

### Exceptions:

1. Unreinforced masonry walls for which ~~height-to-thickness~~ height-to thickness ratios do not exceed ratios set forth in Table A1-B need not be analyzed for out-of-plane loading. Unreinforced masonry walls that exceed the allowable  $h/t$  ratios of Table A1-B shall be braced according to Section A113.5.
2. Parapets complying with Section A113.6 need not be analyzed for out-of-plane loading.
3. Where walls are to be anchored to flexible floor and roof diaphragms, the anchorage shall be in accordance with Section A113.1.

**[BS] A110.3 In-plane loading of URM shear walls and frames.** Vertical ~~lateral load-resisting seismic~~ force-resisting elements shall be analyzed in accordance with Section A112.

**[BS] A110.4 Redundancy and overstrength factors.** Any redundancy or overstrength factors contained in the building code may be taken as unity. The vertical component of ~~earthquake load~~ seismic force ( $E_v$ ) may be taken as zero.

## SECTION A111 SPECIAL PROCEDURE

**[BS] A111.1 Limits for the application of this procedure.** The special procedures of this section may be applied only to buildings having the following characteristics:

1. Flexible diaphragms at all levels above the base of the structure.
2. Vertical elements of the ~~lateral seismic~~ force-resisting system consisting predominantly of masonry or combination of masonry and concrete shear walls.
3. Except for single-story buildings with an open front on one side only, a minimum of two lines of vertical elements of the ~~lateral seismic~~ force-resisting system parallel to each axis of the building (see Section A111.8 for ~~open front~~ open-front buildings).

**[BS] A111.2 Lateral Seismic forces on elements of structures.** With the exception of the provisions in Sections A111.4 through A111.7, elements of structures and nonstructural elements shall comply with ~~Sections A110.2 through A110.4~~ the reduced level seismic forces prescribed in IEBc section 301.1.4.2.

**[BS] A111.3 Crosswalls.** Crosswalls shall meet the requirements of this section.

**[BS] A111.3.1 Crosswall definition.** A crosswall is a wood-framed wall sheathed with any of the materials described in Table A1-D or A1-E or other system as defined in Section A111.3.5. Crosswalls shall be spaced no more than 40 feet (12 192 mm) on center measured perpendicular to the direction of consideration, and shall be placed in each story of the building. Crosswalls shall extend the full story height between diaphragms.

### Exceptions:

1. Crosswalls need not be provided at all levels when used in accordance with Section A111.4.2, Item 4.
2. Existing crosswalls need not be continuous below a wood diaphragm at or within 4 feet (1219 mm) of grade, provided:
  - 2.1. Shear connections and anchorage requirements of Section A111.5 are satisfied at all edges of the diaphragm.
  - 2.2. Crosswalls with total shear capacity of  $0.5S_{D1}\Sigma W_d$  interconnect the diaphragm to the foundation.
  - 2.3. The demand-capacity ratio of the diaphragm between the crosswalls that are continuous to their foundations does not exceed 2.5, calculated as follows:

$$DCR = \frac{(2.1S_{D1}W_d + V_{ca})}{2v_u D} \quad \text{(Equation A1-8)} \quad DCR = \frac{(2.1S_{D1}W_d + V_{ca})}{2v_u D} \quad \text{(Equation A1-8-A1-6)}$$

**[BS] A111.4 Wood diaphragms.**

**[BS] A111.4.1 Acceptable diaphragm span.** A diaphragm is acceptable if the point ( $L, DCR$ ) on Figure A1-1 falls within Region 1, 2 or 3.

**[BS] A111.4.2 Demand-capacity ratios.** Demand-capacity ratios shall be calculated for the diaphragm at any level according to the following formulas:

1. For a diaphragm without qualifying crosswalls at levels immediately above or below:

$$DCR = 2.1S_{D1}W_d / \Sigma v_u D \quad \text{(Equation A1-9-A1-7)}$$

2. For a diaphragm in a single-story building with qualifying crosswalls, or for a roof diaphragm coupled by crosswalls to the diaphragm directly below:

$$DCR = 2.1S_{D1}W_d / \Sigma v_u D + V_{cb} \quad \text{(Equation A1-10-A1-8)}$$

3. For diaphragms in a multistory building with qualifying crosswalls in all levels:

$$DCR = 2.1S_{D1} \Sigma W_d / (\Sigma \Sigma v_u D + V_{cb}) \quad \text{(Equation A1-11-A1-9)}$$

$DCR$  shall be calculated at each level for the set of diaphragms at and above the level under consideration. In addition, the roof diaphragm shall also meet the requirements of Equation A1-10 A1-8.

4. For a roof diaphragm and the diaphragm directly below, if coupled by crosswalls:

$$DCR = 2.1 S_{D1} \Sigma W_d / \Sigma \Sigma v_u D \quad \text{(Equation A1-12-A1-10)}$$

**[BS] A111.5 Diaphragm shear transfer.** Diaphragms shall be connected to shear walls and new vertical seismic force-resisting elements with connections capable of developing the diaphragm-loading tributary to the shear wall or new seismic force-resisting elements given by the lesser of the following formulas:

$$V = 1.2 S_{D1} C_p W_d \quad \text{(Equation A1-13-A1-11)}$$

using the  $C_p$  values in Table A1-C, or

$$V = v_u D \quad \text{(Equation A1-14-A1-12)}$$

**[BS] A111.6 Shear walls (In-plane loading).**

**[BS] A111.6.1 Wall story force.** The wall story force distributed to a shear wall at any diaphragm level shall be the lesser value calculated as:

$$F_{wx} = 0.8 S_{D1} (W_{wx} + W_d / 2) \quad \text{(Equation A1-15-A1-13)}$$

but need not exceed

---

$$F_{wx} = 0.8 S_{D1}(W_{wx} + V_u D)$$

(Equation A1-14)

**[BS] A111.6.2 Wall story shear.** The wall story shear shall be the sum of the wall story forces at and above the level of consideration.

---

$$V_{wx} = \sum F_{wx}$$

(Equation A1-15)

**[BS] A111.6.3 Shear wall analysis.** Shear walls shall comply with Section A112.

**[BS] A111.6.4 ~~Moment frames~~ New seismic force-resisting elements.** ~~Moment~~ New seismic force-resisting elements such as moment frames, braced frames ~~used in place of or~~ shear walls shall be designed as required by the building code, except that the seismic forces shall be as specified in Section A111.6.1, and the story drift ratio shall be limited to 0.015, except as further limited by Section A112.4.2 for moment frames.

**[BS] A111.8 Open-front design procedure.** A single-story building with an open front on one side and crosswalls parallel to the open front may be designed by the following procedure:

1. Effective diaphragm span,  $L_i$ , for use in Figure A1-1 shall be determined in accordance with the following formula:

---

$$L_i = 2[(W_w / W_d) L + L]$$

(Equation A1-16)

2. Diaphragm demand-capacity ratio shall be calculated as:

---

$$DCR = 2.1 S_{D1}(W_d + W_w) / [(V_u D) + V_{cb}]$$

(Equation A1-17)

## SECTION A112 ANALYSIS AND DESIGN

**[BS] A112.1 General.** The following requirements are applicable to both the general procedure and the special procedure for analyzing vertical elements of the lateral force-resisting system.

**[BS] A112.2 Existing in-plane shear of unreinforced masonry walls.**

**[BS] A112.2.1 Flexural rigidity.** Flexural components of deflection may be neglected in determining the rigidity of an unreinforced masonry wall.

**[BS] A112.2.2 Shear walls with openings.** Wall piers shall be analyzed according to the following procedure, which is diagrammed in Figure A1-2.

1. For any pier,
  - 1.1. The pier shear capacity shall be calculated as:

---

$$V_a = v_m A_n / 4.5$$

(Equation A1-18)

Where  $A_n$  = area of net mortared or grouted section of a wall or wall pier

- 1.2. The pier rocking shear capacity shall be calculated as:

---

$$V_r = 0.9 P_D D/H$$

(Equation A1-24A1-19)

2. The wall piers at any level are acceptable if they comply with one of the following modes of behavior:
- 2.1. Rocking controlled mode. When the pier rocking shear capacity is less than the pier shear capacity, i.e.,  $V_r < V_a$  for each pier in a level, forces in the wall at that level,  $V_{wx}$ , shall be distributed to each pier in proportion to  $P_D D/H$ . For the wall at that level:

---

$$0.7V_{wx} < \phi V_r$$

(Equation A1-22A1-20)

- 2.2. Shear controlled mode. Where the pier shear capacity is less than the pier rocking capacity, i.e.,  $V_a < V_r$  in at least one pier in a level, forces in the wall at the level,  $V_{wx}$ , shall be distributed to each pier in proportion to  $D/H$ . For each pier at that level:

---

$$V_p < V_a$$

(Equation A1-23A1-21)

and

---

$$V_p < V_r$$

(Equation A1-24A1-22)

If  $V_p < V_a$  for each pier and  $V_p > V_r$  for one or more piers, such piers shall be omitted from the analysis, and the procedure shall be repeated for the remaining piers, unless the wall is strengthened and reanalyzed.

3. Masonry pier tension stress. Unreinforced masonry wall piers need not be analyzed for tension stress.

**[BS] A112.2.3 Shear walls without openings.** Shear walls without openings shall be analyzed the same as for walls with openings, except that  $V_r$  shall be calculated as follows:

---

$$V_r = 0.9(P_D + 0.5 P_w) D/H$$

(Equation A1-25A1-23)

**[BS] A112.3 Plywood-sheathed shear walls.** Plywood-sheathed shear walls may be used to resist lateral forces for URM buildings with flexible diaphragms analyzed according to provisions of Section A111. Plywood-sheathed shear walls may not be used to share lateral forces with other materials along the same line of resistance.

**[BS] A112.4 Combinations of vertical elements.**

**[BS] A112.4.1 Lateral force-Seismic-force distribution.** Lateral-Seismic forces shall be distributed among the vertical-resisting elements in proportion to their relative rigidities, except that moment-resisting frames shall comply with Section A112.4.2.

**[BS] A112.4.2 Moment-resisting frames.** Moment-resisting frames shall not be used with an unreinforced masonry wall in a single line of resistance unless the wall has piers that have adequate shear capacity to sustain rocking in accordance with Section A112.2.2. The frames shall be designed in accordance with the building code to carry-resist 100 percent of the lateral-seismic forces tributary to that line of resistance, as determined from Equation A1-7 Section A111.2. The story drift ratio shall be limited to 0.0075.

## SECTION A113 DETAILED BUILDING SYSTEM DESIGN REQUIREMENTS



**[BS] A113.1.2 Anchor requirements.** Anchors shall consist of bolts installed through the wall as specified in Table A1-E, or an approved equivalent at a maximum anchor spacing of 6 feet (1829 mm). All wall anchors shall be secured to the ~~joists~~ framing members parallel or perpendicular to the wall to develop the required forces.

**[BS] A113.1.3 Minimum wall anchorage.** Anchorage of masonry walls to each floor or roof shall resist a minimum force determined as  $0.9S_{DS}$  times the tributary weight or 200 pounds per linear foot (2920 N/m), whichever is greater, acting normal to the wall at the level of the floor or roof. Existing wall anchors, if used, must be tested and meet the requirements of ~~this chapter~~ Section A107.5.1 or must be upgraded.

**[BS] A113.2 Diaphragm shear transfer.** ~~Bolts~~ Anchors transmitting shear forces shall have a maximum ~~bolt~~ spacing of 6 feet (1829 mm) and shall have nuts installed over malleable iron or plate washers when bearing on wood, and heavy-cut washers when bearing on steel.

**[BS] A113.6 Parapets.** Parapets and exterior wall appendages not conforming to this chapter shall be removed, or stabilized or braced to ensure that the parapets and appendages remain in their original positions.

The maximum height of an unbraced unreinforced masonry parapet above the lower of either the level of tension anchors or the roof sheathing shall not exceed the ~~height-to-thickness~~ height-to-thickness ratio shown in Table A1-F. If the required parapet height exceeds this maximum height, a bracing system designed for the forces determined in accordance with the building code shall support the top of the parapet. Parapet corrective work must be performed in conjunction with the installation of tension roof anchors.

The minimum height of a URM parapet above any wall anchor shall be 12 inches (305 mm).

**Exception:** If a reinforced concrete beam is provided at the top of the wall, the minimum height above the wall anchor ~~may~~ is permitted to be 6 inches (152 mm).

**TABLE A-1-B  
ALLOWABLE VALUE OF HEIGHT-TO-THICKNESS RATIO OF UNREINFORCED MASONRY WALLS**

WALL TYPES	$0.13_g \leq S_{D1g}$	$0.25_g \leq S_{D1g}$	$S_{D1} \geq 0.4_g$	$S_{D1} > 0.4_g$
			BUILDINGS WITH CROSSWALLS <sup>a</sup>	ALL OTHER BUILDINGS
Walls of one-story buildings	20	16	16 <sup>b,c</sup>	13
First-story wall of multistory building	20	18	16	15
Walls in top story of multistory building	14	14	14 <sup>b,c</sup>	9
All other walls	20	16	16	13

a. Applies to the special procedures of Section A111 only. See Section A111.7 for other restrictions.

b. This value of height-to-thickness ratio may be used only where mortar shear tests establish a tested mortar shear strength,  $v_t$ , of not less than 100 pounds per square inch (690 kPa). This value may also be used where the tested mortar shear strength is not less than 60 pounds per square inch (414 kPa), and where a visual examination of the collar joint indicates not less than 50-percent mortar coverage.

c. Where a visual examination of the collar joint indicates not less than 50-percent mortar coverage, and the tested mortar shear strength,  $v_t$ , is greater than 30 pounds per square inch (207 kPa) but less than 60 pounds per square inch (414 kPa), the allowable height-to-thickness ratio may be determined by linear interpolation between the larger and smaller ratios in direct proportion to the tested mortar shear strength.



**TABLE 0-A1-E  
STRENGTH VALUES OF NEW MATERIALS USED IN CONJUNCTION WITH EXISTING CONSTRUCTION**

NEW MATERIALS OR CONFIGURATION OF MATERIALS	STRENGTH VALUES
Horizontal diaphragms	Plywood sheathing applied directly over existing straight sheathing with ends of plywood sheets bearing on joists or rafters and edges of plywood located on center of individual sheathing boards. 675 lbs. per ft.
Crosswalls	Plywood sheathing applied directly over wood studs; no value should be given to plywood applied over existing plaster or wood sheathing. 1.2 times the value specified in the current building code.
	Drywall or plaster applied directly over wood studs. The value specified in the current building code.
	Drywall or plaster applied to sheathing over existing wood studs. 50 percent of the value specified in the current building code.
Tension <del>bolts<sup>e</sup></del> <del>anchors<sup>f</sup></del>	<del>Bolts</del> <del>Anchors</del> extending entirely through unreinforced masonry wall secured with bearing plates on far side of a <del>three-wythe</del> <del>minimum</del> wall with at least 30 square inches of area. <sup>b,c</sup> 5,400 lbs. per <del>bolt</del> <del>anchor</del> for three <del>wythes</del> <del>minimum</del> walls. 2,700 lbs. for two-wythe walls.
Shear <del>bolts<sup>e</sup></del> <del>anchors<sup>f</sup></del>	<del>Bolts</del> <del>Anchors</del> embedded a minimum of 8 inches into unreinforced masonry walls; <del>bolts</del> <del>anchors</del> should be centered in 2 1/2 - inch-diameter holes with dry- pack or nonshrink grout around the circumference of the <del>bolt</del> <del>anchor</del> . The value for plain masonry specified for solid masonry in the <del>current building code</del> <del>TMS 402</del> ; no value larger than those given for 3/4 - inch <del>bolts</del> <del>anchors</del> should be used.
Combined tension and shear <del>bolts</del> <del>anchors<sup>f</sup></del>	Through- <del>bolts</del> <del>anchors</del> — <del>bolts</del> <del>anchors</del> meeting the requirements for shear and for tension <del>bolts</del> <del>anchors</del> . <sup>b,c</sup> Tension—same as for tension <del>bolts</del> <del>anchors</del> . Shear—same as for shear <del>bolts</del> <del>anchors</del> .
	Embedded <del>bolts</del> <del>anchors</del> — <del>bolts</del> <del>anchors</del> extending to the exterior face of the wall with a 2 1/2 - inch round plate under the head and drilled at an angle of 22 1/2 degrees to the horizontal; installed as specified for shear <del>bolts</del> <del>anchors</del> . <sup>a,b,c</sup> Tension—3,600 lbs. per <del>bolt</del> <del>anchor</del> . Shear—same as for shear <del>bolts</del> <del>anchors</del> .
Infilled walls	Reinforced masonry infilled openings in existing unreinforced masonry walls; provide keys or dowels to match reinforcing. Same as values specified for unreinforced masonry walls.
Reinforced masonry <sup>d</sup>	Masonry piers and walls reinforced per the current building code. The value specified in the current building code for strength design.
Reinforced concrete <sup>d</sup>	Concrete footings, walls and piers reinforced as specified in the current building code. The value specified in the current building code for strength design.

For SI: 1 inch = 25.4 mm, 1 square inch = 645.16 mm<sup>2</sup>, 1 pound = 4.4 N.

a. Embedded ~~bolts~~ ~~anchors~~ to be tested as specified in Section A107.4.

b. ~~Bolts~~ ~~to~~ ~~Anchors~~ shall be 1/2 inch minimum in diameter.

c. Drilling for ~~bolts~~ ~~and~~ ~~dowels~~ ~~anchors~~ shall be done with an electric rotary drill; impact tools should not be used for drilling holes or tightening anchors and shear bolt nuts.

d. No load factors or capacity reduction factor shall be used.

e. Other bolt sizes, values and installation methods may be used, provided a testing program is conducted in accordance with Section A107.5.3. The strength value shall be determined by multiplying the calculated allowable value, determined in accordance

with Section A107.5.3, by 3.0, and the usable value shall be limited to a maximum of 1.5 times the value given in the table. Bolt spacing shall not exceed 6 feet on center and shall be not less than 12 inches on center.

f. An alternative adhesive anchor bolt system is permitted to be used providing: a) Its properties and installation conform to an ICC Evaluation Service Report; and b) The Report states that the system's use is in unreinforced masonry as an acceptable alternative to Sections A107.4, A113.1, or TMS 402 Section 2.1.4. The Report's allowable values shall be multiplied by a factor of 3 to obtain strength values and the strength reduction factor  $\Phi$  shall be taken equal to 1.0.

**Reference standards type:** This reference standard is new to the ICC Code Books  
**Add new standard(s) as follows:**

### ASTM C1531-15, Standard Test Methods for In Situ Measurement Of Masonry Mortar Joint Shear Strength Index

**Reason:** Appendix A1 was first introduced to the legacy code UCBC by the proponent (SEAOC) in or about 1990. During the intervening years, various standards have been developed with practical considerations to users of the Appendix A1 in retrofitting URM buildings. Appendix A1 closely aligns with the ASCE 41-13 in Reduced Performance Objective, a Collapse Prevention Performance level (S-5) for BSE-1E Seismic Hazard Level demands. The special procedure under Appendix A1 is consistent with the Tier 2 deficiency-based procedures of ASCE 41-13 Chapter 5 for this Performance Objective. An *Ad Hoc* Committee was convened under the direction of SEAOC Existing Building Committee. The *Ad Hoc* Committee was chaired by Fred Turner, Staff Structural Engineer with the California Alfred E. Alquist Seismic Safety Commission, and who also chairs ASCE 41-17 Masonry Team. Participants in the *Ad Hoc* Committee includes delegates from Structural Engineers Associations of California and of Washington. The proposed modifications are essentially editorial, including removal of text where ASTM standards are available, and coordination between the Appendix A1 and ASCE 41 chapter 15. A brief summary of the proposed modifications are listed below:

Section A102, Scope. Proposes adding a story height restriction to be consistent with ASCE 41 Chapter 15 and Table 3-2..

Section A103, Definitions. Revisions proposed to improve consistency and eliminate discrepancies with ASCE 41 and TMS 402 definitions.

Section A104, Symbols and Notations. Revisions proposed for consistency and elimination of discrepancies with ASCE 41 and TMS 402 definitions.

Section A105, General Requirements. Added "and referenced standards" to be complied with for clarification. Added construction quality assurance requirements for the plans for consistency with ASCE 41 and TMS 402.

Section A106, Material Requirements. Changes proposed for consistency with condition assessments and materials provisions in ASCE 41 Chapters 15 and 11. In A106.2.3.1 and .2, replaced text with a reference to ASTM C1531 and C496 which have more current sets of provisions. Replaced reference to ASTM C90 for concrete masonry unit buildings with C140 to broaden the options available to users, and, in particular, to address concrete masonry units that don't necessarily comply with C90; and edit sections to eliminate clauses covered in the Standards.

Section A107, Quality Control. Changes proposed for consistency with quality control provisions in ASCE 41 Chapters 15 and 11. Added reference to ASCE E488 which has a more current set of provisions than current provisions. Proposed deletion of Reports requirements in A107.5.4 since it would be addressed in new provisions of Section A105.

Section A108, Design strength. Changes proposed for consistency with design strength requirements of ASCE 41 Chapter 15. Added a 1.5 factor in the denominator of Equations A1-3 and A1-4 to be consistent with strength design, Chapters 11 and 15 of ASCE 41 to replace the 0.67 factor that is proposed to be deleted in the numerator of Equation A1-18 of Section A112, so there is no substantive effect for this change. Deletes the alternate method in Section A108.2 for estimating strength for consistency with ASCE 41 Chapters 11 and 15 since such methods are no longer considered reliable for older masonry walls.

Section A109, Analysis and Design Procedure. Proposes adding a reference to ASCE 41 as an acceptable alternate procedure and deleting the phrase "based on the building code" since it is no longer needed. ASCE 41 is a national standard for the seismic evaluation and retrofit of existing buildings. In time, ASCE 41 will be harmonized to adhere to provisions in Appendix A1.

Section A110, General Procedure. Editorial.

Section A111, Special Procedure. Proposes changes for consistency with special procedure in ASCE 41 Chapter 15. Clarifies that lateral forces on certain elements of structures are permitted to comply with reduced IBC level forces of IEBC Section 301. In Section A111.6.4 expanded the provisions to permit use of other types of vertical resisting systems than moment frames.

Section A112, Analysis and Design. Proposed minor editorial changes and revised equation A1-18 to be consistent with ASCE 41 Chapters 15 and 11 to address corresponding changes in A108 and to address conditions where masonry is partially grouted.

Section A113, Detailed System Design Requirements. Proposed minor changes for consistency with ASCE 41 Chapter 15.

### **Bibliography**

The following resource materials are referenced in this chapter or are relevant to the subject matter addressed in this chapter.

ASCE 41, *Seismic Evaluation and Retrofit of Existing Buildings*, American Society of Civil Engineers, 2017.

ABK-84, *Methodology for Mitigation of Seismic Hazards in Existing Unreinforced Masonry Buildings: The Methodology*. Topical Report 08, National Science Foundation, Contract No. NSF-C-PFR78-19200. Washington, DC: Applied Science and Research Applications, 1984.

ABK-86, *Guidelines for the Evaluation of Historic Brick Masonry Buildings in Earthquake Hazard Zones*. ABK, A Joint Venture, Funded by the Department of Parks and Recreation of the State of California and the National Park Service, United States Government, January 1986.

ATC-78, *Tentative Provisions for the Development of Seismic Regulations for Buildings*, Report ATC 3-16. Redwood City, CA: Applied Technology Council, 1978.  
 ATC-87, *Evaluating the Seismic Resistance of Existing Buildings*, Report ATC-14. Redwood City, CA: Applied Technology Council, 1987.  
 ICBO-1988 through 1997, *Uniform Code for Building Conservation*. Whittier, CA: International Conference of Building Officials, 1988-1997.  
 ICBO-01, *Guidelines for the Seismic Retrofit of Existing Buildings*. Whittier, CA: International Conference of Building Officials, 2006.  
 Preservation Brief 2, *Repointing Mortar Joints in Historic Masonry Buildings*. Robert C. Mack, FAIA, and John P. Speweik for the National Park Service, United States Government, October 1998.  
 TN 46, *Technical Note on Maintenance of Brick Masonry*, pp. 3-5, *Mortar Joint Repair*. Reston, VA: The Brick Industry Association, December 2005.  
 Getty 2003. *Planning and Engineering Guidelines for the Seismic Retrofitting of Historic Adobe Structures*.

**Cost Impact:** Will increase the cost of construction

No cost impact for URM buildings six stories or less. For buildings taller than six stories, the explicit limit serves to guide user to use the body of International Existing Building Code. The updated definition for unreinforced masonry wall, based on whether wall reinforcement meets the building code requirements for reinforced masonry walls, will have a cost impact. As a minimum, lightly reinforced masonry walls need to be evaluated by a design professional in meeting the minimum life-safety and performance objectives intended in the building code. This will increase the cost to engage a design professional, but will have no overall impact on construction cost.

**Analysis: Staff note:** A review of the standard(s) proposed for inclusion in the code, ASTM C1531-09, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2016. ASCE 41-2017 is part of the update proposal for all standards currently referenced in the codes. ASTM C140 is currently referenced in IBC and IRC, and ASTM C34 is currently referenced in the IRC.

## Report of Committee Action Hearings

### Committee Action:

**As Modified**

#### Modify as follows:

**[BS] A106.1 Condition of Existing materials.** Existing materials used as part of the required vertical load-carrying or seismic force-resisting system shall be evaluated by on-site investigation and determined not to be in poor condition including degraded mortar, degraded masonry units, or significant cracking; or shall be repaired, enhanced, retrofitted or removed and replaced with new materials. Mortar joint deterioration shall be patched by pointing or re-pointing of the eroded joint in accordance with Section A106.2.3.9. Existing significant cracks in solid unit unreinforced and in solid grouted hollow unit masonry shall be repaired by epoxy pressure injection and/or by fiber sheets bonded by epoxy to masonry surface.

**[BS] A106.2.3.9 Pointing.** Deteriorated mortar joints in unreinforced masonry walls shall be pointed in accordance with the following requirements:

1. **Joint preparation.** Deteriorated mortar shall be cut out by means of a toothing chisel or non- impact power tool until sound mortar is reached but to a depth of not less than  $\frac{3}{4}$  inch (19.1 mm) or twice the thickness of the joint, whichever is less, and 2 inches (50 mm) maximum. Care shall be taken not to damage the masonry edges. After cutting is complete, all loose material shall be removed with a brush, air or water stream.
2. ~~**Mortar preparation.** The mortar mix shall be proportioned as required by the construction specifications. The pointing mortar shall be prepared by first thoroughly mixing all ingredients dry and then mixing again, adding only enough water to produce a damp unworkable mix that retains its form when pressed into a ball. manufacturer's approved instructions. The mortar shall be kept in a damp condition for not less than one hour and not more than 1 1/2 hours for pre-hydration; then sufficient water shall be added to bring it to a workable consistency for pointing, which is somewhat drier than conventional masonry mortar. Use mortar within one and two and one-half hours from its initial mixing.~~
3. **Packing.** The joint into which the mortar is to be packed shall be dampened but without freestanding water. The mortar shall be tightly packed into the joint in layers not exceeding  $\frac{1}{4}$  inch (6.4 mm) deep until it is filled; then it shall be tooled to a smooth surface to match the original profile.

Nothing shall prevent pointing of any masonry wall joints before testing is performed in accordance with Section A106.2.3, except as required in Section A107.1.

#### **[BS] A108.1 Strength values.**

1. Strength values for existing materials are given in Table A1-D and for new materials in Table A1-E.
2. The strength reduction factor,  $\Phi$ , shall be taken equal to 1.0.
3. The use of materials not specified herein shall be subjected to the discretion and approval of the authority having jurisdiction ~~building official~~.

**[BS] A109.2 Selection of procedure.** Buildings with rigid diaphragms shall be analyzed by the general procedure of Section A110. Buildings with flexible diaphragms shall be analyzed by the general procedure or, when applicable, are permitted to be analyzed by the special procedure of Section A111. ~~ASCE 41 is permitted to be used as an alternate procedure for both rigid diaphragm or flexible diaphragm buildings.~~

**[BS] A111.2 Seismic forces on elements of structures.** With the exception of the provisions in Sections A111.4 through A111.7, elements of structures and nonstructural elements shall comply with the reduced level seismic forces prescribed in IBC section 304.4.4.2 ~~Sections A110.2 through A110.4.~~

**Committee Reason:** The committee believes this update to the Appendix is badly needed. The limitation to six stories is a good safeguard. It is appropriate to coordinate the provisions with the latest edition of ASCE 41, bringing it in line with current requirements. The modification removes circular references back to ASCE 41 and Chapter 3 of the IBC. It also removes a specific requirement for epoxy injection, allowing a more flexible response. Finally, instead of a more detailed provision that would preclude manufacturer's warranty for mortar preparation and installation, the code will stick the manufacturer's instructions,

**Assembly Action:**

**None**

**Public Comments**

*Public Comment 1:*

**Maureen Traxler, representing City of Seattle Dept of Construction & Inspections (maureen.traxler@seattle.gov); Jonathan Siu (Jon.Siu@seattle.gov) requests Approve as Modified by this Public Comment.**

**Further modify as follows:**

**[BS] A108.1 Strength Values.**

1. Strength values for existing materials are given in Table A1-D and for new materials in Table A1-E.
2. The strength reduction factor,  $\Phi$ , shall be taken equal to 1.0.
3. ~~The use of materials not specified herein shall be subjected to the discretion and approval of the building official.~~  
The use of materials not specified herein shall be based on substantiating research data or engineering judgement, as approved by the code official.

**Commenter's Reason:** The proposed modification restores the original language of Item 3 with a slight editorial modification. The phrase "substantiating research data or engineering judgment" gives the code official some guidance about when to approve materials, and gives some authority to require research or engineering data to support the use of unusual materials. The word "new" is deleted so that the item will apply to any material that isn't specified in the code. Proposal EB2-15 in Group A established that the term "code official" would be used consistently in the IBC instead of "building official".

**Final Action Results**

**EB58-16**

**AMPC1**

## Code Change No: **EB60-16**

### Original Proposal

**Section:** [BS] A301.2

**Proponent:** Carl Baldassarra, P.E., FSFPE, representing the Code Technology Committee

**THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.**

**Revise as follows:**

**[BS] A301.2 Scope.** The provisions of this chapter apply to residential buildings of light-frame wood construction containing one or more of the structural weaknesses specified in Section A303.

**Exception:** The provisions of this chapter do not apply to the buildings, or elements thereof, listed below. These buildings or elements require analysis by a registered design professional in accordance with Section A301.3 to determine appropriate strengthening:

1. Group R-1.
2. ~~Group R-1, R-2 or R-4 occupancies~~ R with more than four dwelling units.
3. Buildings with a lateral force-resisting system using poles or columns embedded in the ground.
4. Cripple walls that exceed 4 feet (1219 mm) in height.
5. Buildings exceeding three stories in height and any three-story building with cripple wall studs exceeding 14 inches (356 mm) in height.
6. Buildings where the *code official* determines that conditions exist that are beyond the scope of the prescriptive requirements of this chapter.
7. Buildings or portions thereof constructed on concrete slabs on grade.

**Reason:** The purpose of this code change is to coordinate the exceptions to Section A303 with the Group R occupancies and uses in the IBC. The original scope of this appendix in the UBC was limited to single-family homes, duplexes, and other small congregate residences. Proposal EB78-04/05 modified the scope and exception to replace the reference to UBC Group R, Division 1 with the what was intended to be the appropriate Group R categories in the IBC. The modification was not quite correct.

Detached small group homes/congregate residences are equivalent to single family homes. Thus, the exception needs to be modified to remove the limitation on Group R-4 buildings. These facilities should be able to use this appendix.

In addition, the language regarding number of dwelling units typically does not apply to Group R-1, but more typically to Group R-2 and R-3. It is noted the UBC originally excluded all multifamily occupancies and other Group R, Division 1 occupancies and uses from the appendix. Thus the limiting language is split between transient lodging (Group R-1) and facilities with dwelling units (all Group R).

Below is the original change.

**EB78-04/05**  
**A301.2**

Proponent: Michael Valley, Magnusson Klemencic Associates, Seattle, WA, representing CSEA/Structural Engineers Association of Washington

**Revise as follows:**

A301.2 Scope. The provisions of this chapter apply to light, wood-frame residential buildings of light-frame wood construction that are ~~in assigned to Seismic Design Category Categories C, D, or E and F of the 2003 IBC (located in Seismic Zones 3 and 4 of the UBC)~~, containing one or more of the structural weaknesses specified in Section A303.

**Exception:** The provisions of this chapter do not apply to the buildings, or elements thereof, listed below. These buildings or elements require analysis by an engineer or architect in accordance with Section A301.3 to determine appropriate strengthening.

1. Group R, ~~Division 1 R-1, R-2 or R-4~~ occupancies with more than four dwelling units.
2. Buildings with a lateral-force-resisting system using poles or columns embedded in the ground.
3. Cripple walls that exceed 4 feet (1219 mm) in height.
4. Buildings exceeding three stories in height and any three-story building with cripple wall studs exceeding 14 inches (356 mm) in height.
5. Buildings where the building official determines that conditions exist that are beyond the scope of the prescriptive requirements of this chapter.

The provisions of this chapter do not apply to structures, or portions thereof, constructed on a concrete slab on grade.

The details and prescriptive provisions herein are not intended to be the only acceptable strengthening methods permitted. Alternative details and methods may be used when approved by the building official. Approval of alternatives shall be based on test data showing that the method or material used is at least equivalent in terms of strength, deflection and capacity to that provided by the prescriptive methods and materials.

The provisions of this chapter may be used to strengthen historic structures, provided they are not in conflict with other related provisions and requirements that may apply.

Reason: Editorial: Revise construction type to be consistent with IBC language (see IBC Section 2302.1), and revise occupancy in exception 1 to be consistent with the IBC (see IBC Section 310.1). Note that the IBC specifies four Group R occupancies, while the UBC specified only two such divisions. The added IBC divisions are added to the exception to maintain the previous scope of this chapter based on the UBC occupancy classification.

It is not appropriate to exempt buildings assigned to SDC C from these requirements as this covers buildings in what is considered a moderate level of seismic hazard. SDC F is only associated with Occupancy Category IV, to which this chapter does not apply.

This proposal is submitted by the ICC Code Technology Committee (CTC). The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. In 2014 and 2015 ICC CTC Committee has held 4 open meetings and numerous Work Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website [CTC](#).

**Cost Impact:** Will not increase the cost of construction

The original intent was for the provisions of Appendix A3 to apply to single family homes, including small group homes, for reasons of public health and safety. This proposal restores that intent. This is an allowance for group homes to utilize Appendix A3, not an additional requirement.

### Report of Committee Action Hearings

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This proposal has the effect of restricting Group R-1 occupancies from using the provisions of this Appendix. This is where you don't want the method to apply. It would not affect the small bed and breakfasts since most of those would be 4 dwelling units or less.

**Assembly Action:**

**None**

### Final Action Results

**EB60-16**

**AS**



**Code Change No: EB61-16**

**Original Proposal**

**Section:** [BS] A304.3.1, [BS] TABLE A3-A (New)

**Proponent:** Randy Shackelford, representing Simpson Strong-Tie (rshackelford@strongtie.com)

**Revise as follows:**

**[BS] A304.3.1 Existing perimeter foundations.** Where the building has an existing continuous perimeter foundation, all perimeter wall sill plates shall be anchored to the foundation with adhesive anchors or expansion anchors in accordance with Table A3-A.

Anchors shall be installed in accordance with Figure A3-3, with the plate washer installed between the nut and the sill plate. The nut shall be tightened to a snug-tight condition after curing is complete for adhesive anchors and after expansion wedge engagement for expansion anchors. All anchors shall be installed in accordance with manufacturer's recommendations. ~~Where existing conditions prevent anchor installations through the sill plate, this connection shall be made in accordance with Figure A3-4A, A3-4B or A3-4C. The spacing of these alternate connections shall comply with the maximum spacing requirements of Table A3-A.~~ Expansion anchors shall not be used where the installation causes surface cracking of the foundation wall at the locations of the anchor.

Where existing conditions prevent anchor installations through the top of the sill plate, this connection shall be made in accordance with Figure A3-4A, A3-4B or A3-4C. Alternate anchorage methods having a shear capacity of 900 pounds parallel to the wall shall be permitted. The spacing of these alternate connections shall comply with the maximum spacing requirements of Table A3-A.

**TABLE [BS] TABLE A3-A  
SILL PLATE ANCHORAGE AND CRIPPLE WALL BRACING**

NUMBER OF STORIES ABOVE CRIPPLE WALLS	MINIMUM SILL PLATE CONNECTION AND MAXIMUM SPACING <sup>a, b</sup>	AMOUNT OF BRACING FOR EACH WALL LINE <sup>e, d, e, f</sup>	
		A Combination of Exterior Walls Finished with Portland Cement Plaster and Roofing Using Clay Tile or Concrete Tile Weighing More than 6 psf (287 N/m <sup>2</sup> )	All Other Conditions
One story	½ inch (12.7 mm) spaced 6 feet, 0 inch (1829 mm) center-to-center with washer plate	Each end and not less than 50 percent of the wall length	Each end and not less than 40 percent of the wall length
Two stories	½ inch (12.7 mm) spaced 4 feet, 0 inch (1219 mm) center-to-center with washer plate; or 5/8 inch (15.9 mm) spaced 6 feet, 0 inch (1829 mm) center-to-center with washer plate	Each end and not less than 70 percent of the wall length	Each end and not less than 50 percent of the wall length
Three stories	5/8 inch (15.9 mm) spaced 4 feet, 0 inch (1219 mm) center-to-center with washer plate	100 percent of the wall length <sup>g</sup>	Each end and not less than 80 percent of the wall length <sup>g</sup>

- a. Sill plate anchors shall be adhesive anchors or expansion bolts in accordance with Section A304.3.1.
- b. All washer plates shall be 3 inches by 3 inches by 0.229 inch minimum. The hole in the plate washer is permitted to be diagonally slotted with a width of up to 3/16 inch larger than the bolt diameter and a slot length not to exceed 1 3/4 inches, provided a standard cut washer is placed between the plate washer and the nut.