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	CHAPTER 1 SCOPE AND ADMINISTRATION	**CHAPTER 1 SCOPE AND ADMINISTRATION**
		101.2 Scope. The provisions of this code ~~International Existing Building Code~~ shall apply to the repair, alteration, change or occupancy, addition to and relocation of existing buildings**.** **Exception:** Detached one- and two-family dwelling and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade in height, shall comply with this code or the International Residential Code.
	104.11 Alternative materials, design and methods of construction, and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design, or method of construction shall be approved where the code official finds that the proposed design is satisfactory and complies wit the intent of the provisions of this code, and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability, and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons the alternative was not approved.	

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		106.2.5 Exterior balconies and elevated walking surfaces. New section.
		109.3.6 Weather-exposed balcony and walking surface waterproofing. New section.
	CHAPTER 2 DEFINITIONS	
	202 APPROVED. New definition.	
		202 BUILDING. New definition.
	202 DEFERRED SUBMITTAL. New definition.	
		202 DISPROPORTIONATE EARTHQUAKE DAMAGE. New definition.
		202 EXISTING STRUCTURE. New definition.
	202 RELOCATABLE BUILDING. New definition.	
	202 REROOFING. New definition.	
		202 RISK CATEGORY. New definition.
		202 ROOF COATING. New definition.
	202 ROOF RECOVER. New definition.	
	202 ROOF REPAIR. New definition.	
	202 ROOF REPLACEMENT. New definition.	
		202 SIESMIC FORCES. New definition.
		202 SUBSTANTIAL STRUCTURAL ALTERATION. New definition.
		202 SUBSTANTIAL STRUCTURAL DAMAGE. A condition where any ~~one or both~~ of the following apply: 1. In any story, the vertical elements of the lateral force-resisting system have suffered damage such that the lateral load-carrying capacity of the structure in any horizontal direction has been reduced by more than 33 percent from its predamage condition. 2. The capacity of any vertical component carrying gravity load~~-carrying component~~, or any group of such components, that has a tributary area

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		support more than 30 percent of the total area of the structure's floor(s) and roof(s) has been reduced more than 20 percent from its predamage condition and the remaining capacity of such affected elements, with respect to all dead and live loads, is less than 75 percent of that required by the International Building Code ~~this code~~ for new buildings of similar structure, purpose and location. 3. The capacity of any structural component carrying snow load, or any group of such components, that supports more than 30 percent of the roof area of similar construction has been reduced more than 20 percent from its predamage condition, and the remaining capacity with respect to dead, live and snow loads is less than 75 percent of that required by the International Building Code, for new buildings of similar structure, purpose and location.
	CHAPTER 3 PROVISIONS FOR ALL COMPLIANCE METHODS	**CHAPTER 3 PROVISIONS FOR ALL COMPLIANCE METHODS**
		301.1 General. Revise- The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with Section 301.2, 301.3, or 301.4.
	301.1.4.1 Compliance with International Building Code-level seismic forces. Revise- 2. ~~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. ~~both the BSE-1 and BSE-2 earthquake hazard levels and the corresponding performance levels shown in Table 310.1.4.1.~~	

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	301.1.4.2 Compliance with reduced International Building Code- level seismic forces. Revise 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. Revise- 3. ASCE 41, using the performance objective in Table 301.4.2 for the applicable risk category. ~~Compliance with ASCE 31 based on the applicable performance level as shown in Table 301.4.2. It shall be permitted to use the BSE-1 earthquake hazard level as defined n ASCE 41 and subject to the limitations in Item 4 below.~~	
	TABLE 301.1.4.2 PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES. Revised.	
		301.2 Repairs. New section.
		301.3 Alteration, addition or change in occupancy. New section.
		301.4 Relocated buildings. New section.
		301.5 Compliance with a4ccessibility. New section.
		302.2 Dangerous conditions. New section.
	302.3 Existing materials. New section.	
	302.4 New and replacement materials. New section.	
	302.5 Occupancy and use. New section.	
		302.5.1 New structural members and connections. New section.
		SECTION 303 STRUCTURAL DESING LOADS AND EVALAUTION AND DESIGN PROCEDURES. New section and subsections.
		SECTION 304 IN-SITU LOAD TESTS. New section.

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		SECTION 305 ACCESSIBILITY FOR EXISTING BUILDINGS. New section and subsections.
	CHAPTER 4 PRESCRIPTIVE COMPLIANCE METHOD	**CHAPTER 4 REPAIRS ~~PRESCRIPTIVE COMPLIANCE METHOD~~-** renumbered from IEBC-2015 Chapter 6
	402.2 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any addition that constitutes substantial improvement of the existing structure, as defined in Section 202, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any additions that do not constitute substantial improvement of the existing structure, as defined in Section 202, are not required to comply with the flood design requirements for new construction.	
	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	

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	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 aa Tier 3 procedure and the two-level performance objective n Table 301.4.1 for the applicable risk category, shall be deemed to meet the requirements of Section 1613.	
	403.4.1 Seismic Design Category F. New section.	
	403.5 Bracing for unreinforced masonry parapets upon reroofing. New section.	
	403.6 Wall anchorage for unreinforced masonry walls in major alterations. New section.	
	403.7 Bracing for unreinforced masonry parapets in major alterations. New section.	
	403.8 Roof diaphragms resisting wind loads in high-wind regions. New section.	
	403.11 Refuge areas. New section and subsections.	
	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,	

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	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.	
	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., ~~based on material properties and design strengths applicable at the time of original construction~~.	
	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. 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.	

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	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.	
		405.2.1.1 Snow damage. New section.
		405.2.2 Disproportionate earthquake damage. New section.
	SECTION 406 GLASS REPLACEMENT AND REPLACEMENT WINDOWS. New section.	
	Section 407.1 Conformance. **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. New section.	
	407.4 Structural. 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.	
	408.1 Historic buildings. The provisions of this code that require improvements r3elative to a building's existing condition or, in the case of repairs, that require improvements relative to a building's predamage condition, shall not be mandatory for historic buildings uncles specifically required in this section. ~~relating to the~~	

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	~~construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judges by the building official to not constitute a distinct life safety hazard~~.	
	408.2 Life safety hazards. New section**.**	
	408.2 Flood hazard areas. Within flood hazard areas established in accordance with Section 1612.3 of the International Building Code, where the work proposed constitutes substantial improvement as defined in Section 1612.2 of the International Building Code, the building shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable:	
	410.8.11 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 in accessible toilet or bathing rooms, provide directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room. This directional sign shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.	
	410.8.14 Amusement rides. New section**.**	

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	CHAPTER 5 CLASSIFICATION OF WORK	**CHAPTER 4 REPAIRS ~~CLASSIFICATION OF WORK~~** renumbered from IEBC-2015 Chapter 4
		501.2 Fire—resistance ratings. New section.
		502.2 Disproportionate earthquake damage. New section.
		502.4 ~~402.3~~ Existing structural elements carrying gravity load. **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.
		502.5 ~~402.4~~ Existing structural elements carrying lateral load. **Exception:** 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 be considered 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.

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		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 and the provisions of the International Residential Code.
		502.7 Carbon monoxide alarms in existing portions of a building. New section**.**
		502,8 Additions to Group E facilities. New section**.**
		503.1 ~~403.1~~ General. Add- 3. Where provided in below-grade transportation stations, existing and new escalators shall have a clear width of less than 32 inches (815 mm).
		503.3 ~~403.3~~ Existing structural elements carrying gravity load. **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^2) or less over an existing single layer of roof covering.
		503.7 Anchorage for concrete and reinforced masonry walls. New section**.**

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		503.8 Anchorage for unreinforced masonry walls in major alterations. New section.
		503.10 Anchorage of unreinforced masonry partitions in major alterations. New section.
		503.11 Substantial structural alteration. New section.
		503.13 ~~403.9~~ Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be required to meet the requirements of Section 1609 or Section 1613 of the International Building Code, provided that all of the following apply: ~~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 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 capacity of existing structural systems to resist forces is not reduced. ~~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 and connected to existing or new structural elements as required by the International Building Code for new construction ~~as required for new construction~~.

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		3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction. 4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.
		503.15 Carbon monoxide alarms. New section.
		504.5 ~~405.5~~ Opening protectives. Doors and windows within 10 feet (3048 mm) of fire escape stairways ~~along the fire escape~~ shall be protected with 3/4 – hour opening protectives. **Exception:** Opening protection shall not be required in buildings equipped throughout with an approved automatic sprinkler system.
	505.1 Scope. Level 3 alterations apply where the work area exceeds 50 percent of the building area.	
		505.2 ~~406.2~~ Replacement window opening control devices. Revise 3. One of the following applies: The top of the sill of the window opening is at a height less than 36 inches (815 mm) above the finished floor. 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. 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.

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		505.4 Emergency escape and rescue openings. New section**.**
		506.4 ~~407.4~~ Structural. Section and subsections rewritten.
		507.4 Structural. New section**.**
	CHAPTER 6 REPAIRS	.
	601.3 Flood hazard areas. In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.	
	606.2.4 Flood hazard areas. In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.	
	CHAPTER 7 ALTERATIONS- LEVEL 1	**CHAPTER 7 ALTERATIONS- LEVEL 1**
		701.4 Emergency escape and rescue openings. New section**.**
	702.4 Window openings control devices. New section	**702.4 Window openings control devices on replacement windows.**
	702.5 Emergency escape and rescue openings. New section**.**	**702.5 Replacement window emergency escape and rescue openings.**
		705.1 ~~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 or the International Building Code. **Exception:**

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		1. Roof replacement or roof recover of existing low slope roof coverings ~~Reroofing~~ shall not be required to meet the minimum design slope requirement of one-quarter 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 1502 of the International Building Code for roofs that provide positive roof drainage. For the purpose 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 and scuppers designed and installed in accordance with Section 1502 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 in accessible toilet or bathing rooms, provide directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room. This directional sign shall include the International Symbol of Accessibility and sign	

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	characters shall meet the visual character requirements in accordance with ICC A117.1.	
		705.3.1 Roof replacement. New section and subsections**.**
	SECTION 706 REROOFING. New section.	
		706.2 ~~707.2~~ Addition or replacement of roofing or replacement of equipment. Any existing gravity load-carrying structural element fir which an alteration causes increase in design dead, lice 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 ~~Where addition or replacement of roofing or replacement of equipment results in additional dead loads, structural components supporting such roofing or equipment shall comply with the gravity load components of the~~ International Building Code for new structures. **Exceptions:** ~~1. Structural elements where the additional dead load from the roofing or equipment does not increase the force in the element 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 altered building complies with ~~constructed in accordance with the International Residential Code or~~ the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code. ~~and where the dead load from the roofing or equipment is not increased by more than 5 percent.~~

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		3. Buildings in which the increased dead load is due entirely to the addition ~~Addition~~ of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m^2) or less over an existing, single layer of roof covering.
	CHAPTER 8 ALTERATIONS- LEVEL 2	**CHAPTER 8 ALTERATIONS- LEVEL 2**
		801.3 Compliance. **Exceptions:** Add- 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). 6. New structural members and connections shall be permitted to comply with alternative design criteria in accordance with Section 302.
	803.3 Smoke compartments ~~barriers.~~ In group I-2 occupancies where the work area is on a story used for sleeping rooms for more than 30 patients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 407.5 of the International Building Code as required for new construction. ~~Smoke barriers in Group I-2 occupancies shall be installed where~~ required by Sections 803.3.1 and 803.3.2.	
	803.2.2 Fire-resistance rating. 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	

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	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 building official to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, including fire-resistance-rate 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 rating shall be identified in the evaluation reports submitted. ~~The smoke barriers shall be fire-resistance rated for 30 minutes and constructed in accordance with the International Building Code.~~	
		SECTION 804 CARBON MONOXIDE DETECTION. New section.
	805.3.1.1 Single-exit buildings. Revise- 4. In Group R-4 occupancies the maximum occupant load excluding staff is 16. ~~community residences for the developmentally disabled, the maximum occupant load excluding staff is 12.~~	**805.3.1.1 Single-exit buildings.** Section rewritten**.**
	805.3.1.2 Fire escapes required. For other than Group I-2, where more than one exit is required, an existing or newly constructed fire escape	

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	complying with Section 805.3.1.2.1 shall be accepted as providing one of the required means of egress.	
		TABLE 803.1.1(1) STORIES WITH NE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES. New table.
		TABLE 803.1.1(2) STORIES WITH NE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES. New table.
	805.4.5 Emergency power source in Group I-3. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702 of the International Building Code. **Exceptions:** 1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1 of the International Building Code. 2. Emergency power is not required where remote mechanical operating releases are provided. ~~Work areas in buildings of Group I-3 occupancy having remote power unlocking capability for more than 10 locks shall be provided with an emergency power source for such locks. Power shall be arranged to operate automatically upon failure of normal power within 10 seconds and fir a duration of not less than 1 hour.~~	
	805.10 Refuge areas. New section and subsections.	
		806.2 ~~807.4~~ Existing structural elements carrying gravity loads. Any existing gravity load-carrying structural

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		element for which an alteration causes an increase in design dead, live 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. ~~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 tie applicable design gravity loads required by the International Building Code~~. Any existing gravity load-carrying structural elements whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads, including snow drift effects, as required by the International Building Code for new buildings. ~~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~~. 1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the entire building and its alteration comply with the conventional light-frame construction methods of the International Building Code and the provisions of the International Residential Code. 2. Buildings in which the increased dead load is attributable to the addition of a second layer of roof covering weighing 3 pounds per square foot

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		(0.1437 kN/m^2) or less over an existing single layer of roof covering.
	807.5 Existing structural elements resisting lateral loads. **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 be considered 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 the 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.	**806.3 ~~807.5~~ Existing structural elements resisting lateral loads.** **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 be considered 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. Reduced seismic forces shall be permitted. For the 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.
		806.4 ~~807.6~~ Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and ~~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 meet the requirements of Section 1609 or Section 1613 of ~~be deigned for the forces conforming to~~ the International Building Code, provided that the

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		following conditions are met ~~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.~~. 2. New structural elements are detailed and connected to existing structural elements as required by the International Building Code. 3. ~~4.~~ New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code; and 4. ~~5.~~ The alterations do not create a structural irregularity as defined in ASCE 7 or make a structural irregularity more severe. ~~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~~.
	CHAPTER 9 ALTERATIONS- LEVEL 3	**CHAPTER 9 ALTERATIONS- LEVEL 3**
	902.2 Boiler and furnace equipment rooms. Boiler and furnace equipment rooms adjacent to or within Groups I-1, I-2, I-4, R-1, R-2 and R-4 occupancies shall be enclosed by 1-hour fire-resistance-rated construction. ~~the following facilities shall be enclosed by 1-horu fire-resistance-rated construction: day nurseries, children shelter facilities, residential childcare facilities, and similar facilities with children below the age of 2 1/2 years or that are classified as Group I-2 occupancies, shelter facilities,~~	

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	~~residences for the developmentally disabled, group homes, teaching family homes, transitional living homes, rooming and boarding houses, hotels, and multiple dwellings.~~ **Exceptions;** **1.** Steam boiler equipment operating at pressures of ~~Furnace and boiler equipment of low-pressure type, operating at pressure of~~ 15 pounds per square inch gauge (psig) (103.4 KPa) or less is not required to be enclosed. ~~for steam equipment or 170 psig (1171 KPa) or less for hot water equipment, when installed in accordance with manufacturer recommendations.~~ **2.** Hot water boilers operating at pressures of 1870 psig (1171 KPa) or less are not required to be enclosed. **3.** Furnace and boiler equipment ~~of residential R-3 type~~ with 400,000 ~~200,000~~ British thermal units (Btu) (4.22 x 108 J ~~2.11 x 108 J~~) per hour input rating or less is not required to be enclosed. **4.** Furnace rooms protected with automatic sprinkler protection.	
	904.1.3 Upholstered furniture or mattresses. New section**.**	
		904.1.4 Other required automatic sprinkler systems. New section.
	906.2 Type B dwelling or sleeping units. **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	

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	15, 1991 are not required to provide Type B dwelling or sleeping units.	
	907.4.3 Seismic Design Category F. New section.	
	CHAPTER 10 CHANGE OF OCCUPANCY	
	1001.2 Certificate of occupancy. New section.	
	1001.2.1 Change of use. New section.	
	1002.1 Compliance with the building code. Add- 11. Group I-2 occupancies.	
	1004.1 Fire protection. Fire protection requirements of Section 1012 shall apply where a building or portions thereof undergo a change of occupancy classification or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code.	
		SECTION 1006 ~~1007~~ STRUCTURAL. Rewritten.
	1012.5.1 Height and area for change to higher hazard category. Revise- **Exception:** For high-rise buildings constructed in compliance with a previously issued permit, the type of construction reduction specified in Section 403.2.1 of the International Building Code is permitted. This shall include the reduction for columns. The high-rise building is required to be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the International Building Code. ~~In other than Groups H, F-1 and S-1, in lieu of fire walls, use of fire barriers having a fire-resistance raring of not less than that specified in~~	

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	~~Table 706.4 of the International Building Code, shall be permitted to meet area limitations required for the new occupancy in buildings throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the International Fire Code.~~	
	CHAPTER 11 ADDITIONS	**CHAPTER 11 ADDITIONS**
		1103.1 ~~1103.2~~ Additional gravity loads. Any existing gravity load-carrying structural elements for which an addition and its related alterations cause and increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered to carry the gravity loads required by the International Building Code for new structures .Any existing gravity load-carrying structural elements whose gravity load-carrying capacity is decreased as part of the addition and its related alterations shall be considered to be an altered element subject to the requirements of Section 806.2. Any existing element that will form part f the lateral load path for any part of the addition shall be considered to be an existing lateral load-carrying structural element subject to the requirements of Section 1103.3. ~~Existing structural elements supporting any additional gravity loads as a result of additions shall comply with the International Building Code~~. **Exception:** 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.
	1103.3 Lateral force-resisting system.	

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	Exceptions: Revise- 2. Any existing lateral load-carrying structural element whose demand-capacity ration with the addition considered s not more than 10 percent greater than its demand-capacity with the addition ignored shall be permitted to remain unaltered. Fir purposes of this exception, comparisons of demand-capacity ratios and calculations 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 rations, the demand shall consider applicable load combinations involving International Building Code-level seismic forces in accordance with Section 301.1.4.1. ~~In other existing buildings where the lateral-force story shear in any story is not increased by more than 10 percent cumulative.~~	
	1103.5 Flood hazard areas. Revise 1.1, 1.2, 2.1, and 2.2 by adding Section R322 of the International Residential Code as a referenced compliance standard.	
		SECTION 1105 CARBON MONOXIDE ALARMS IN GROUPS I-1, I-2, I-4, AND R. New section.
		SECTION 1106 STORM SHELTERS. New section.
	CHAPTER 12 HISTORIC BUILDINGS	
	1201.4 Flood hazard areas. In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with	

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	Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.	
	1204.1.1 Site approval points. At least one accessible route from a site arrival point to an accessible ~~main~~ entrance shall be provided ~~accessible~~.	
		1205.1 General. **Exceptions:** 1. The code official shall be authorized to accept existing floors and approve operational controls that limit the live load on ant such floor. 2. Repair of substantial damage is not required to comply with Sections 405.2.3 and 405.2.4. Substantial structural damage shall be repaired in accordance with Section 405.2.1.
		SECTION 1206 RELOCATED BUILDINGS. New section.
	CHAPTER 13 RELCOATED OR MOVED BUILDINGS	**CHAPTER 14 ~~13~~ RELCOATED OR MOVED BUILDINGS**
	1302.6 Flood hazard areas. If relocated or moved into a flood hazard area, structures shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.	
	CHAPTER 14 PERFORMANCE COMPLIANCE METHODS	**CHAPTER 13 ~~14~~ PERFORMANCE COMPLIANCE METHODS**
	1401.2.5 Accessibility requirements. All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Section 410 or 705.	
		1301.2.3.1 Additions to Group E facilities. New section.
		1301.2.4 Alterations. New section.

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		1301.2.5 Escalators. New section.
	1401.3.3 Compliance with flood hazard provisions. In flood hazard areas, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the International Building Code or Section R322 of the International Residential Code, as applicable of the work covered by this section constitutes substantial improvement.	
	1401 6.4 Tenant and dwelling unit separations. Evaluate the fire-resistance rating of floors and walls separating tenants, including dwelling units, and not evaluated under Sections 1401.6.3 and 1401.6.5. Group I-2 occupancies shall evaluate the rating of the separations between patient sleeping rooms. Under the categories and occupancies in Table 1401.6.4, determine the appropriate value and entre that value in Table 1401.7 under Safety Parameter 1401.6.4. Tenant and Dwelling Unit Separation, for fire safety, means of egress, and general safety.	
	TABLE 1401.6.4 SEPARATION VALUES. Revised.	
	1401.6.8 Automatic fire detection. Evaluate the smoke detection capability based on the based on the location and operation of automatic smoke detectors in accordance with Section 907 of the International Building Code and the International Mechanical Code. Under the categories and occupancies in Table 1401.6.8, determine the appropriate value and enter that value into Table 1401.7, under Safety Parameter 1401.6.8, Automatic Fire Detection, for fire	

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	safety, means of egress, and general safety. Facilities in Group I-2 occupancies meeting Category a, b or c shall be considered to fail the evaluation.	
	TABLE 1401.6.8 AUTOMATIC FIRE DETECTION VALUES. Revised.	
	1401.6.8.1 Categories. Add- 6. Category f- Smoke detectors in corridors only.	
	TABLE 1401.6.9 FIRE ALARM SYSTEM VALUES. Revised.	
	TABLE 1401.6.10 SMOKE CONTROL VALUES. Revised.	
	TABLE 1401.6.12 DEAD-END VALUES. Revised.	
	1401.6.12.1 Categories. Add- 4. Category d- Dead ends exceeding Category a.	
	1401.6.16 Mixed occupancies. Where a building has two or more occupancies that are not in the same occupancy classification, the separation between the mixed occupancies shall be evaluated I accordance with this section. Where there is not separation between the mixed occupancies or the separation between the mixed occupancies does not qualify for any of the categories indicated in Section 1401.6.16.1, the building shall be evaluated as indicated in Section 1401.6, and the value for mixed occupancies shall be zero. Under the categories and occupancies in Table 1401.6.16, determine the appropriate value and enter that value into Table 1401.7 under Safety Parameter 1401.6.16, Mixed Occupancies, for fire safety and general safety. Fire buildings	

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	without mixed occupancies, the value shall be zero. Facilities in Group I-2 occupancies meeting Category a shall be considered to fail the evaluation.	
	TABLE 1401.6.16 MIXED OCCUPANCY VALUES. Revised.	
	1401.6.17 Automatic sprinklers. Evaluate the ability to suppress a fire based on the installation of an automatic sprinkler system in accordance with Section 903.3.1.1 of the International Building Code. "Required sprinklers" shall be based in the requirements of this code. Under the categories and occupancies in Table 1401.6.16, determine the appropriate value and enter that value into Table 1401.7 under Safety Parameter 1401.6.17, Automatic Sprinklers, for fire safety, means of egress divided by 2, and general safety. High-rise buildings defined in Chapter 2 of the International Building Code that undergo a change of occupancy to Group R shall be equipped throughout with an automatic sprinkler system in accordance with Section 403 of the International Building Code and Chapter 9 of the International Building Code. Facilities in Group I-2 occupancies meeting Category a, b, c, or f shall be considered to fail the evaluation.	
	TABLE 1401.6.17 SPRINKLER SYSTEM VALUES. Revised.	
	1401.6.20 Smoke compartmentation. New section and subsections.	
	1401.6.21 Patient ability, concentration, smoke compartment location and ratio to attendant. New section and subsections.	

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	TABLE 1401.8 MANDATORY SAFETY SCORES. Revised.	
	CHAPTER A1 SEISMIC STRENGTHENING PROVISIONS FOR UNREINFORCED MASONRY BEARING WALL BUILDINGS.	
		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 unrestrained 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.
		A106.1 Condition of existing materials. New section**.**
		A106.2.3.6 Minimum quality of masonry. Revise- 2. Individual unreinforced masonry walls with v_{to} consistently less than 30 pounds per square inch (207 kPa) shall be entirely pointed and retested ~~prior to retesting~~. 3. The lower-bound mortar strength f_{spL} is defined as the mean minus one standard deviation $P_{d=L}$ of tensile-splitting test values fsp. ~~mortar shear strength v_t, is the value in pounds per square inch (kPa) that is exceeded by 80 percent of the mortar shear test values, v_{to}.~~
	A106.3.2.1 Multiwythe solid brick. **Exception:** Where S_{D1} is not more than 0.3, veneer wythes anchored as specified in the building code and made composite with back masonry may be used for calculation of the	

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	effective thickness. ~~Veneer wythes anchored as specified in the building code and made composite with backup masonry may be used for calculation to the effective thickness, where S_{D1} exceeds 0.3.~~	
	A106.3.3.9 Pointing. Deteriorated mortar joints in unreinforced masonry walls shall be pointed in accordance with the following requirements: 1. **Joint preparation.** The deteriorated mortar shall be cut out by means of a toothing chisel or non-impact power tool to a depth at which sound mortar is reached but not less than ¾ inch (19.1 mm). Care shall be taken to not damage the brick edges. After cutting is complete, all loose material shall be removed with a brush, air stream or water steam. 2. **Mortar preparation.** The mortar mix shall be proportioned as required by the registered design professional. The pointing mortar shall be prehydrated by first thoroughly mixing all ingredients dry and then mixing again, adding only enough water to produce a damp workable mix which will retain its form when pressed into a ball. The mortar shall be kept in a damp condition for 1 2. hours; then sufficient water shall be added to bring it to a consistency that is somewhat drier than conventional masonry mortar. 3. **Packing.** The joint into which the mortar is to be packed shall be damp but without	**A106.3.3.9 Pointing.** Deteriorated mortar joints in unreinforced masonry walls shall be pointed in accordance with the following requirements: 4. **Joint preparation.** The deteriorated mortar shall be cut out by means of a toothing chisel or non-impact power tool to a depth at which sound mortar is reached but not less than ¾ inch (19.1 mm) or twice the thickness of the joint, whichever is less, but not greater than 2 inches (50 mm). Care shall be taken to not damage the brick edges. After cutting is complete, all loose material shall be removed with a brush, air stream or water steam. ~~5.~~ **Mortar preparation.** The mortar mix shall be proportioned as required by the construction specifications and manufacturer's approved instructions. ~~registered design professional. The pointing mortar shall be prehydrated by first thoroughly mixing all ingredients dry and then mixing again, adding only enough water to produce a damp workable mix which will retain its form when pressed into a ball. The mortar shall be kept in a damp condition for 1 2. hours; then sufficient water shall be added to bring it to a consistency that is somewhat drier than conventional masonry mortar.~~ 6. **Packing.** The joint into which the mortar is to be packed shall be damp but without freestanding

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	freestanding water. The mortar shall be tightly packed into the joint in layers not exceeding ¼ inch (6.4 mm) in depth 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, except as required in Section A107.1. ~~according to UBC Standard 2-1-8. Nothing shall prevent pointing of any deteriorated masonry wall joints before the tests are made, except as required in Section A107.1~~.	water. The mortar shall be tightly packed into the joint in layers not exceeding ¼ inch (6.4 mm) in depth 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 A106.2.3 ~~A106.3~~, except as required in Section A107.2 ~~A107.1~~.
		A107.4 New wall anchors. New section.
	A107.5 Tests of anchors in unreinforced masonry walls. New section and subsections.	
		A108.1 Strength values. Revise- 2. The strength reduction factor, ~~ϕ~~, shall be taken equal to 1.0. ~~Capacity reduction factors need not be used~~.
		A108.5 Wall tension anchors. New section.
		A111.6.4 New seismic force-resisting elements. New section.
		CHAPTER A3 PRESCRIPTIVE PROVISIONS FOR SEISMIC STREGTHENING OF CRIPPLE WALLS AND SILL PLATE ANCHORAGE OF LIGHT, WOOD-FRAME RESIDENTIAL BUILDINGS
		A301.2 Scope. Insert- 2. Group R with more than four dwelling units.
		A304.3.1 Existing perimeter foundations.

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		Add- Where existing conditions prevent anchor installations through the top of the sill plate, this connection shall be made in accordance with Figure A304.3.1(2), A304.3.1(3) or A304.3.1(4). Alternatively anchorage methods having a minimum shear capacity of 900 pounds (4003 N) per connection parallel to the wall shall be permitted. The spacing of these alternative connections shall comply with the maximum spacing requirements of Table A304.3.1 for ½-inch (12.7 mm) bolts.
	CHAPTER A4 EARTHQUAKE RISK REDUCTION IN WOOD-FRAME RESIDENTIAL BUILDINGS WITH SOFT, WEAK OR OPEN FRONT WALLS	
	A403.8 Horizontal diaphragms. The strength of an existing horizontal diaphragm sheathed with wood structural panels or diagonal sheathing need not be investigated unless the diaphragm is required to transfer lateral forces from vertical elements of the seismic force-resisting system above the diaphragm to elements below the diaphragm because of an offset in placement of the elements. Rotational effects shall be accounted for when asymmetric wall stiffness increases shear demand. ~~Wood diaphragms with stories above shall not be allowed to transmit lateral forces by rotation or cantilever except as allowed by the building code; however, rotational effects shall be accounted for when unsymmetric wall stiffness increases shear demands.~~	

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	~~**Exception:** Diaphragms that cantilever 25 percent of less of the distance between lines of lateral load-resisting elements from which the diaphragm cantilevers may transmit their shears by cantilever, provided the rotational effects on shear walls parallel and perpendicular to the load are taken into account.~~	
	CHAPTER A5 EARTHQUAKE HAZARD REDUCTION IN EXISINT CONCRETE BUILDINGS	
	A502.1 Scope **Exception.** This chapter shall not apply to concrete buildings assigned to Risk Category IV. ~~where seismic Design Category A is permitted.~~	
	A501.1 General. Structures conforming to the requirements of the ASCE 41 Chapter 4, ~~ASCE 31 Tier 1,~~ Screening Phase, are permitted to be shown to be in conformance to this chapter by submission of a report to the building official as described in this section.	
	A507.1 General. A tier 3 evaluation shall be performed using the Nonlinear Static Procedure or Nonlinear Dynamic Procedure of Section 10.3.1.2.2 of ASCE 41. ~~nonlinear procedures of Section 6.3.1.2.2 of ASCE 41,~~ The general assumptions and requirements of Section 10.3 of ASCE 41 ~~6.0.,~~ excluding concrete frames with in-fills shall be used in the evaluation. Reduced International Building Code level site-ground motions in accordance with Section A504.3 are permitted for this evaluation. Structures meeting ASCE 41 Life Safety (LS) acceptance criteria shall be deemed to comply with this chapter. If a Tier 3	

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	analysis identifies nonconforming conditions, such conditions shall be modified to conform to the acceptance criteria. ~~Site-ground motions in accordance with Section A504.3 are permitted for this evaluation~~.	
	APPENDIX C: GUIDELINES FOR THE WIND RETROFIT OF EXISTING BUILDINGS **CHAPTER C1 GABLE END RETROFIT FOR HIGH-WIND AREAS**	
	C101.1 Purposes. New section.	
	C101.2 Eligible buildings and gable end walls. New section.	
	C101.3 Compliance. New section.	
	TABLE C104.5.1 SPACING OF GUSSET ANGLES. Revised.	
	TABLE C104.5.2 SPACING OF LAG OR MASONRY SCREWS USED TO CONNECT SILL PLATE OF GABLE END WALL TO TOP OF THE WALL BELOW. Revised.	
	CHAPTER C2 ROOF DECK FASTENING FOR HIGH-WIND AREAS	
	C201.1 Purposes. New section	
	C201.2 Eligible conditions. New section.	