

2024 International Building Code Significant Changes Report					
2024 Code Section	Title or Subject	Reviewer Comments	Cost Yes/No	Amend Needed Yes/No	TAG Comments/Recommendations
01 Scope and Administration					
No Significant Changes					
02 Definitions					
202	Occupiable Roof	No amendment needed	No	No	Coordinate with IFC TAG
OCCUPIABLE ROOF. An exterior space on a roof that is designed for human occupancy, other than maintenance or repair, and is equipped with a means of egress system meeting the requirements of this code.					
03 Occupancy Classification					
No Significant Changes					
04 Special Detailed Requirements Based on Occupancy and Use					
403.3.1	Number of Sprinkler Risers and System Design		No: See ICC G56-21	No	ICC Proposed Changes
[F] 403.3.1 Number of sprinkler risers and system design. The number of sprinkler risers and system design shall comply with Section 403.3.1.1 or 403.3.1.2, based on building height.					
403.3.1.1	Buildings 420 feet or less in height		No: See ICC G56-21	No	ICC Proposed Changes
[F] 403.3.1.1 Buildings 420 feet or less in height. In buildings 420 feet (128 m) or less in height, sprinkler systems shall be supplied by a single standpipe or sprinkler express riser within each vertical water supply zone.					
403.3.1.2	Buildings more than 420 feet in height		No: See ICC G57-21	No	ICC Proposed Changes
[F] 403.3.1.2 Buildings more than 420 feet in height. In buildings more than 420 feet (128 m) in height, not fewer than two standpipes or sprinkler express risers shall supply automatic sprinkler systems within each vertical water supply zone. Each standpipe or sprinkler express riser shall supply automatic sprinkler systems on alternating floors within the vertical water supply zone such that two adjacent floors are not supplied from the same riser.					
403.5.3	Stairway Door Operation	This proposal may increase the cost of construction. Emergency or standby power systems may need to be connected to the stairway door locking systems permitted in these code section to help ensure the door locks remain locked where that's important to the functioning of the building	Increase: See ICC G60-21	No	ICC Proposed Changes
[BE] 403.5.3 Stairway door operation. Stairway doors other than the exit discharge doors shall be permitted to be locked from the stairway side. Stairway doors that are locked from the stairway side shall be capable of being unlocked without unlatching where any of the following conditions occur: <ol style="list-style-type: none"> Individually or simultaneously upon a signal from the fire command center. Simultaneously upon activation of a fire alarm signal in an area served by the stairway. Upon failure of the power supply to the lock or the locking system. 					

407.4.4.4	Circulation Paths Within a Care Suite		No: See ICC G71-21	No	ICC Proposed Changes														
<p>[BE] 407.4.4.4 Circulation paths within a care suite. The circulation paths within a care suite providing the access to doors required in Section 407.4.4.3 shall have a minimum width of 36 inches (914 mm) and shall not be required to meet the requirements for a corridor or an aisle.</p>																			
411.3.1	Alarm Presignal		Decrease: See ICC G86-21 PtII	No	ICC Proposed Changes														
<p>[F] 411.3.1 Alarm presignal. Activation of any single <i>smoke detector</i>, the <i>automatic sprinkler system</i> or any other single <i>automatic</i> fire-detection device shall immediately initiate an audible and visible alarm at a <i>constantly attended location</i> at the <i>special amusement area</i> from which emergency action, including the manual requirements in Section 411.3.2, can be initiated.</p>																			
411.3.2	Alarm Activation		Decrease: See ICC G86-21 PtII	No	ICC Proposed Changes														
<p>[F] 411.3.2 Alarm activation. Activation of two or more <i>smoke detectors</i>, a single <i>smoke detector</i> equipped with an <i>alarm verification feature</i>, two or more other <i>approved</i> fire detection devices, the <i>automatic sprinkler system</i>, or a manual control located at the <i>constantly attended station</i> required by Section 411.3.1 shall automatically accomplish all of the following:</p> <ol style="list-style-type: none"> 1. Illumination of the <i>means of egress</i> with an illumination level not less than 1 footcandle (11 lux) at the walking surface level. 2. Cessation of conflicting or confusing sounds and visual distractions. 3. Activation of <i>approved</i> directional exit markings. 4. Activation of a prerecorded message, audible throughout the <i>special amusement area</i>, instructing occupants to proceed to the nearest exit. <i>Alarm signals</i> used in conjunction with the prerecorded message shall produce a sound that is distinct from other sounds used during normal operation of the <i>special amusement area</i>. 																			
411.6	Flammable Decorative Materials		Decrease: See ICC G86-21 PtI	No	ICC Proposed Changes														
<p>411.6 Flammable decorative materials. <i>Flammable decorative materials</i> shall comply with Section 806.</p>																			
414.2.5.4	Flammable Gas		Decrease	No															
<p>[F] 414.2.5.4 Flammable gas. The aggregate quantity of Category 1B <i>flammable gas</i> having a burning velocity of 3.9 inches per second (10 cm/s) or less stored and displayed within a single <i>control area</i> of a Group M occupancy or stored in a single <i>control area</i> of a Group S occupancy is allowed to exceed the maximum allowable quantities per <i>control area</i> specified in Table 307.1(1) without classifying the <i>building</i> or use as a Group H occupancy, provided that the materials are stored and displayed in accordance with the <i>International Fire Code</i> and quantities do not exceed the amounts specified in Table 414.2.5.4.</p>																			
T414.2.5.4	Maximum Allowable Quantity of Low Burning Velocity Category 1B Flammable Gas in Group M and S Occupancies Per Control Area		Decrease	No															
<table border="1"> <thead> <tr> <th colspan="3">[F] TABLE 414.2.5.4—MAXIMUM ALLOWABLE QUANTITY OF LOW BURNING VELOCITY CATEGORY 1B FLAMMABLE GAS IN GROUP M AND S OCCUPANCIES PER CONTROL AREA*</th> </tr> <tr> <th rowspan="2">CATEGORY 1B (Low BV)^d</th> <th colspan="2">MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA</th> </tr> <tr> <th>Sprinklered^b</th> <th>Non-sprinklered</th> </tr> </thead> <tbody> <tr> <td>Gaseous</td> <td>390,000 cu ft</td> <td>195,000 cu ft</td> </tr> <tr> <td>Liquefied</td> <td>40,000 lb^c</td> <td>20,000 lb</td> </tr> </tbody> </table> <p>For SI: 1 pound = 0.454 kg, 1 square foot = 0.0929 m², 1 cubic foot = 0.028 m³, 1 inch per second = 2.54 cm/s.</p> <p>a. Control areas shall be separated from each other by not less than a 1-hour fire barrier.</p> <p>b. The building shall be equipped throughout with an approved automatic sprinkler system with a minimum sprinkler design density of Ordinary Hazard Group 2 in the area where flammable gases are stored or displayed.</p> <p>c. Where storage areas exceed 50,000 square feet in area, the maximum allowable quantities area is allowed to be increased by 2 percent for each 1,000 square feet of area in excess of 50,000 square feet, up to not more than 100 percent of the table amounts. Separation of control areas is not required. The aggregate amount shall not exceed 80,000 pounds.</p> <p>d. "Low BV" Category 1B flammable gas has a burning velocity of 3.9 in/s or less.</p>						[F] TABLE 414.2.5.4—MAXIMUM ALLOWABLE QUANTITY OF LOW BURNING VELOCITY CATEGORY 1B FLAMMABLE GAS IN GROUP M AND S OCCUPANCIES PER CONTROL AREA*			CATEGORY 1B (Low BV) ^d	MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA		Sprinklered ^b	Non-sprinklered	Gaseous	390,000 cu ft	195,000 cu ft	Liquefied	40,000 lb ^c	20,000 lb
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415.11.1.1	Hazardous Materials		None: See ICC G91-21	No	ICC Proposed Changes
<p>[F] 415.11.1.1 Hazardous materials. The aggregate quantities of <i>hazardous materials</i> stored and used in a single <i>fabrication area</i> shall not exceed the quantities set forth in Table 415.11.1.1.</p> <p>Exception: The quantity limitations for any hazard category in Table 415.11.1.1 shall not apply where the <i>fabrication area</i> contains quantities of hazardous materials not exceeding the maximum allowable quantities per <i>control area</i> established by Tables 307.1(1) and 307.1(2).</p>					
423.4.1	Design Occupant Capacity		No	No	
<p>423.4.1 Design occupant capacity. The required design occupant capacity of the <i>storm shelter</i> shall include the critical emer- gency operations on the <i>site</i> and shall be the total occupant load of offices and the number of beds.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where <i>approved</i> by the <i>building official</i>, the actual number of occupants for whom each occupied space, floor or <i>building</i> is designed, although less than that determined by occupant load calculation, shall be permitted to be used in the determination of the required design occupant capacity for the <i>storm shelter</i>. 2. Where a new <i>building</i> is being added on an existing <i>site</i>, and where the new <i>building</i> is not of sufficient size to accom- modate the required design occupant capacity of the <i>storm shelter</i> for all of the <i>buildings</i> on the <i>site</i>, the <i>storm shelter</i> shall accommodate not less than the required occupant capacity of the new building. 3. Where <i>approved</i> by the <i>building official</i>, the required design occupant capacity of the shelter shall be permitted to be reduced by the design occupant capacity of any existing <i>storm shelters</i> on the <i>site</i>. 					
423.4.2	Location	This will increase the cost of construction on some projects (where a campus has multiple buildings far apart) by requiring critical emergency operations centers have the same travel distance requirement that E occupancy areas do. In cases, this will require multiple storm shelters as it does for E occupancy facilities.	Increase: See ICC G95-21	No	ICC Proposed Changes
<p>423.4.2 Location. <i>Storm shelters</i> shall be located within the <i>building</i> they serve or shall be located where the distance of travel from not fewer than one exterior door of each <i>building</i> to a door of the shelter serving that building does not exceed 1,000 feet (305 m), unless otherwise <i>approved</i>.</p>					
05 General Building Heights and Areas					
Table 509.1	Incidental Uses	Language added to I occs and Ambulatory Care Facilities "and automatic Sprinkler System"	y	N	Needs additional Review this is not a significant Change

[F] TABLE 509.1—INCIDENTAL USES—continued

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour and provide automatic sprinkler system
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour and provide automatic sprinkler system
In Group I-2, physical plant maintenance shops	1 hour and provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 8.67 cubic feet or greater	1 hour and provide automatic sprinkler system
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 50 square feet	1 hour and provide automatic sprinkler system
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.
Dry type transformers over 112.5 kVA and required to be in a fire resistant room per NEC (NFPA 70) Section 450.21 (B) ¹	1 hour or provide automatic sprinkler system
For SI: 1 square foot = 0.0929 m ² , 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m ³ . ¹ Dry type transformers rated over 35,000 volts and oil-insulated transformers shall be installed in a transformer vault complying with NFPA 70.	

06 Types of Construction

No Significant Changes

07 Fire and Smoke Protection Features

704.2	Protection of Primary Structural Frame	This is a significant editorial change to combine multiple requirements from earlier versions.	No	No	
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<p>704.2 Protection of the primary structural frame. Members of the <i>primary structural frame</i> that are required to have protection to achieve a <i>fire-resistance rating</i> shall be provided individual encasement protection by protecting them on all sides for the full length, including connections to other structural members, with materials having the required <i>fire-resistance rating</i>. Where a column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Individual encasement protection on all sides shall be permitted on all exposed sides provided that the extent of protection is in accordance with the required <i>fire-resistance rating</i>, as determined in Section 703. Primary structural members other than columns that do not support more than two floors or one floor and roof, or a load-bearing wall or a nonload-bearing wall more than two stories high, are permitted to be protected by the membrane of a fire-resistance-rated wall or horizontal assembly where the membrane provides the required <i>fire-resistance rating</i>. Columns that meet the limitations of Section 704.3.1. 					
705.7.1	Floor assemblies in Type III construction	This is clarification to address platform construction for supporting construction of loadbearing exterior walls in Type III construction. The new model code change has been historically used as a method to address this condition based on the American Wood Council handbook.	No	No	
<p>705.7.1 Floor assemblies in Type III construction. In Type III construction where a floor assembly supports gravity loads from an exterior wall, the <i>fire-resistance rating</i> of the portion of the floor assembly that supports the exterior wall shall be not less than the <i>fire-resistance rating</i> required for the exterior wall in Table 601. The <i>fire-resistance rating</i> provided by the portion of the floor assembly supporting and within the plane of the exterior wall shall be permitted to include the contribution of the ceiling membrane when considering exposure to fire from the inside. Where a floor assembly supports gravity loads from an exterior wall, the building elements of the floor construction within the plane of the exterior wall, including but not limited to rim joists, rim boards and blocking, shall be in accordance with the requirements for interior building elements of Type III construction.</p>					
706.1.2	Deemed to comply of party walls	The use of NFPA 221 has been allowed in Section 706.2, and this allows the use of double fire walls. NFPA 221 provides additional requirements beyond structural stability that ICC deemed to provide the same level of performance as those required in this section.	No	No	
<p>706.1.2 Deemed to comply. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section, subject to the limitations of Section 102.4. The required <i>fire-resistance rating</i> shall be determined by Section 706.4.</p>					
710.4 Exception	Continuity	This Exception is intended to address challenging issues with providing multiple access for ductwork above ceilings. Refer to FS49-21	No	No	
<p>710.4 Continuity. Smoke partitions shall extend from the top of the foundation or floor below to the underside of the floor or roof sheathing, deck or slab above or to the underside of the ceiling above where the ceiling membrane is constructed to limit the transfer of smoke.</p> <p>Exception: In Group I-2, a lay-in ceiling system shall be considered capable of limiting the transfer of smoke where the ceiling tiles weigh not less than 1 pound per square foot (4.882 kg/m²) and where the HVAC system is fully ducted in accordance with Section 603 of the <i>International Mechanical Code</i>.</p>					
<p>08 Interior Finishes</p>					

803.13	Interior Finish Requirements based on occupancy	Adopt Model Code Language	No	No	
<p>803.13 Interior finish requirements based on occupancy. Interior wall and ceiling finish shall have a classification such that the flame spread index and smoke-developed index values are not higher than those corresponding to the classification specified in Table 803.13 for the group and location designated. Interior wall and ceiling finish materials tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.1.1.1, shall be permitted to be used where a Class A classification in accordance with ASTM E84 or UL 723 is required.</p>					
<p>09 Fire Protection and Life Safety Systems</p>					
903.2.2.2	Laboratories involving testing, research and development	Automatic sprinklers are required in lab for reasearch or testing of lithium-ion or lithium metal batteries. Considering the hazard associated with these batteries, it makes sense that ICC approved this new amendment. The benefit would outweigh the increase in cost. (F66-21: Approved As Submitted)	Yes	No	
<p>[F] 903.2.2.2 Laboratories involving testing, research and development. An automatic sprinkler system shall be installed throughout the fire areas utilized for the research and development or testing of lithium-ion or lithium metal batteries.</p>					
903.2.4	Group F-1	This is similar to 903.2.2.2 except that this is for a manufacturing facility involving lithium-ion or lithium metal batteries. (Part of F66-21: Approved As Submitted)	Yes	No	
<p>[F] 903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:</p> <ol style="list-style-type: none"> 1. A Group F-1 fire area exceeds 12,000 square feet (1115 m²). 2. A Group F-1 fire area is located more than three stories above grade plane. 3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²). 4. A Group F-1 occupancy is used to manufacture lithium-ion or lithium metal batteries. 5. A Group F-1 occupancy is used to manufacture vehicles, energy storage systems or equipment containing lithium-ion or lithium metal batteries where the batteries are installed as part of the manufacturing process. 					
903.2.7.3	Lithium-ion or lithium metal battery storage	Similar to 903.2.2.2 and 903.2.4	Yes	No	
<p>[F] 903.2.7.3 Lithium-ion or lithium metal battery storage. An automatic sprinkler system shall be provided in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries by Section 320 of the International Fire Code or Chapter 32 of the International Fire Code.</p>					
903.2.9	Group S-1	Similar to 903.2.2.2 and 903.2.4	Yes	No	
<p>[F] 903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:</p> <ol style="list-style-type: none"> 1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²). 2. A Group S-1 fire area is located more than three stories above grade plane. 3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²). 4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²). 5. A Group S-1 fire area used for the storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet (46.4 m²). 					

903.4.3	Alarms	Visual alarm device is now required in addition to an audible device to be located outside of a building protected by an automatic sprinkler system.	Yes (should be minimal)	No	
<p>[F] 903.4.3 Alarms. An approved audible and visual sprinkler waterflow alarm device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler waterflow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a waterflow switch is required by Section 903.4.1 to be electrically supervised, such sprinkler waterflow alarm devices shall be powered by a fire alarm control unit or, where provided, a fire alarm system. Where a fire alarm system is provided, actuation of the automatic sprinkler system shall actuate the building fire alarm system.</p> <p>Exception: Automatic sprinkler systems protecting one- and two-family dwellings.</p>					
907.2.1	Group A	Code change brings into the IBC a few exceptions for fire alarm systems and emergency voice alarm communication systems. These exceptions are buried in a standard that is not referenced from Chapter 9 of the IBC or the IFC. As a result, designers and codeofficials may not be aware that the exception already exists. Per ICC, code change will decrease the cost of construction. (ICC CAH F86-21: Approved As Submitted)	No	No	
<p>[F] 907.2.1 Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 300 or more, or where the Group A occupant load is more than 100 persons above or below the lowest level of exit discharge. Group A occupancies not separated from one another in accordance with Section 707.3.10 shall be considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow. 2. Manual fire alarm boxes and the associated occupant notification system or emergency voice/alarm communication system are not required for Group A-5 outdoor bleacher-type seating having an occupant load of greater than or equal to 300 and less than 15,000 occupants, provided that all of the following are met: <ol style="list-style-type: none"> 2.1. A public address system with standby power is provided. 2.2. Enclosed spaces attached to or within 5 feet (1524 mm) of the outdoor bleacher-type seating compose, in the aggregate, a maximum of 10 percent of the overall area of the outdoor bleacher-type seating or 1,000 square feet (92.9 m²), whichever is less. 2.3. Enclosed accessory spaces under or attached to the outdoor bleacher-type seating shall be separated from the bleacher-type seating in accordance with Section 1030.1.1.1. 2.4. All means of egress from the bleacher-type seating are open to the outside. 3. Manual fire alarm boxes and the associated occupant notification system or emergency voice/alarm communication system are not required for temporary Group A-5 outdoor bleacher-type seating, provided that all of the following are met: <ol style="list-style-type: none"> 3.1. There are no enclosed spaces under or attached to the outdoor bleacher-type seating. 3.2. The bleacher-type seating is erected for a period of less than 180 days. 3.3. Evacuation of the bleacher-type seating is included in an approved fire safety plan. 					

907.2.2.2	Laboratories involving research and development or testing.	Per ICC, The code change will increase the cost of construction. On a straight forward analysis this series of changes increases the cost construction. However, the majority of the medium to large size facilitiesinvolved in these activities do have detection and any new construction of this nature includes detection. Balanced against the cost of a fire that cannot be extinguished routinely the installation of the early detection is ultimately a savings. (ICC CAH F88-21: Approved As Submitted)	Yes	No	
<p>[F] 907.2.2.2 Laboratories involving research and development or testing. A fire alarm system activated by an air- sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed throughout the entire fire area utilized for the research and development or testing of lithium-ion or lithium metal batteries.</p>					
907.2.4.1	Manufacturing involving lithium-ion or lithium metal batteries.	New in 2024: See above for note on cost impact (ICC CAH F88-21: Approved As Submitted)	Yes	No	
<p>[F] 907.2.4.1 Manufacturing involving lithium-ion or lithium metal batteries. A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed throughout the entire fire area where lithium-ion or lithium metal batteries are manufactured; and where the manufacturer of vehicles, energy storage systems or equipment containing lithium-ion or lithium metal batteries when the batteries are installed as part of the manufacturing process.</p>					
907.2.7	Group M	907.2.7.2 is a coordinating pointer where an M Group occupancy would require detection. based upon proposed Section 321. No cost impact. (ICC CAH F88-21: Approved As Submitted)	No	No	
<p>[F] 907.2.7 Group M. Fire alarm systems shall be required in Group M occupancies in accordance with Sections 907.2.7.1 and 907.2.7.2.</p>					
907.2.7.2	Storage of lithium-ion or lithium metal batteries.	New in 2024, No cost impact (ICC CAH F88-21: Approved As Submitted)	Yes	No	
<p>[F] 907.2.7.2 Storage of lithium-ion or lithium metal batteries. A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries in accordance with Section 320 of the International Fire Code.</p>					
907.2.10.2	Storage of lithium-ion or lithium metal batteries.	New in 2024 (ICC CAH F88-21: Approved As Submitted)	Yes	No	
<p>[F] 907.2.10.2 Storage of lithium-ion or lithium metal batteries. A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed throughout the entire fire area where required for the storage of lithium-ion batteries or lithium metal batteries in accordance with Section 320 of the International Fire Code.</p>					

909.20.5.4	Smoke detection	This requirement is from NFPA 92, which has historically been provided, similar to the same requirement under the elevator pressurization section. (FS115-21: Approved as Submitted)	No	No	
<p>909.20.5.4 Smoke detection. The fan system shall be equipped with a <i>smoke detector</i> that will automatically shut down the fan system when smoke is detected within the system.</p>					
909.21	Elevator hoistway pressurization alternative	Multiple published papers identify how elevator hoistway pressurization systems will impact other smoke controls systems serving high-rise buildings, including stair pressurization. While Section 909.4.7 specifically requires the engineer to consider the interaction of multiple systems, the need should be emphasized when the building is the building utilizes elevator pressurization to protect the hoistway. As the components/systems utilized to mitigate the impact are critical to the functionality of the system, the language simply clarifies the entire system must comply with the provisions of Section 909. (FS116-21: Approved as Submitted)	No	No	
<p>909.21 Elevator hoistway pressurization alternative. Where elevator hoistway pressurization is provided in lieu of required enclosed elevator lobbies, the pressurization system shall comply with Sections 909.21.1 through 909.21.11. The design shall consider the interaction effects of the operation of multiple smoke control systems for all design scenarios in accordance with Section 909.4.7. All components or systems associated with the means of mitigating adverse interaction shall comply with the applicable subsections of Section 909.</p>					
912.5 (912.5.1 - 912.5.4)	Signs	Currently both the IBC section 905.2 and IFC section 905.2 require the signage for fire department connection to meet the requirements found in NFPA 14 Standard for the Installation of Standpipes and Hose Systems. This code change pulls those requirements into the IFC for quick identification. Cost Impact: Per ICC, The code change will not increase or decrease the cost of construction. This is already a requirement and is an editorial clarification. (ICC CAH F99-21: Approved As Submitted)	No	No	

<p>[F] 912.5.1 Lettering. Each fire department connection (FDC) shall be designated by a sign with raised letters not less than 1 inch (25.4 mm) in height. For manual standpipe systems, the sign shall also indicate that the system is manual and that it is either wet or dry.</p> <p>[F] 912.5.2 Serving multiple buildings. Where a fire department connection (FDC) services multiple <i>buildings, structures or locations</i>, a sign shall be provided indicating the <i>building, structures or locations</i> served. Where the FDC does not serve the entire <i>building</i>, a sign shall be provided indicating the portions of the <i>building</i> served.</p> <p>[F] 912.5.3 Multiple or combined systems. Where combination or multiple system types are supplied by the fire department connection, the sign or combination of signs shall indicate both designated services.</p> <p>[F] 912.5.4 Indication of pressure. The sign also shall indicate the pressure required at the outlets to deliver the <i>standpipe system</i> demand.</p> <p>Exception: Where the pressure required is 150 pounds per square inch (1034 kPa) or less.</p>					
915.1	General	New exception in 2024	No	No	
<p>[F] 915.1 General. Carbon monoxide (CO) detection shall be installed in new <i>buildings</i> in accordance with Section 915.1.1. Carbon monoxide detection shall be installed in <i>existing buildings</i> in accordance with Chapter 11 of the <i>International Fire Code</i>.</p> <p>Exception: Carbon monoxide detection is not required in Group S, Group F and Group U occupancies that are not normally occupied.</p>					
915.1.1	Where required	New language in 2024 affects existing state amendment. Recommend adopting model code changes and adding R-2 at Item 5 to match existing state amendment.	No	Yes	
<p>[F] 915.1.1 Where required. Carbon monoxide detection shall be installed in the locations specified in Section 915.2 where any of the following conditions exist.</p> <ol style="list-style-type: none"> 1. In buildings that contain a CO source. 2. In buildings that contain or are supplied by a CO-producing forced-air furnace. 3. In buildings with attached private garages. 4. In buildings that have a CO-producing vehicle that is used within the building. 5. All Group R-2 occupancies, with the exception of R-2 college dormitories. 					
915.2.4	CO-producing forced-air furnace.	New in 2024	Yes	No	
<p>[G] 915.2.4 CO-producing forced-air furnace. Carbon monoxide detection complying with Item 2 of Section 915.1.1 shall be installed in all enclosed rooms and spaces served by a fuel-burning, forced-air furnace.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where a carbon monoxide detector is provided in the first room or space served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location. 2. Dwelling units that comply with Section 915.2.1. 					
915.2.5	Private garages.	New in 2024	Yes	No	

<p>[F] 915.2.5 Private garages. Carbon monoxide detection complying with Item 3 of Section 915.1.1 shall be installed within enclosed occupiable rooms or spaces that are contiguous to the attached <i>private garage</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. In <i>buildings</i> without communicating openings between the <i>private garage</i> and the <i>building</i>. 2. In rooms or spaces located more than one <i>story</i> above or below a <i>private garage</i>. 3. Where the <i>private garage</i> connects to the <i>building</i> through an <i>open-ended corridor</i>. 4. An <i>open parking garage</i> complying with Section 406.5 or an enclosed parking garage complying with Section 406.6 shall not be considered a <i>private garage</i>. 5. <i>Dwelling units</i> that comply with Section 915.2.1. 					
915.2.6	All other occupancies.	New in 2024	Yes	No	
<p>[F] 915.2.6 All other occupancies. For locations other than those specified in Section 915.2.1 through 915.2.5, <i>carbon monoxide detectors</i> shall be installed on the ceiling of enclosed rooms or spaces containing CO producing devices or served by a CO source forced-air furnace.</p> <p>Exception: Where environmental conditions prohibit the installation of <i>carbon monoxide detector</i> in an enclosed room or space, <i>carbon monoxide detectors</i> shall be installed in an <i>approved</i> enclosed location contiguous with the room or space that contains a CO source.</p>					
915.3.1	Alarm limitations.	New in 2024.	No	No	
<p>[F] 915.3.1 Alarm limitations. <i>Carbon monoxide alarms</i> shall only be installed in <i>dwelling units</i> and in <i>sleeping units</i>. They shall not be installed in locations where the code requires <i>carbon monoxide detectors</i> to be used.</p>					
915.3.2	Fire alarm system required.	New in 2024	Yes	No	
<p>[F] 915.3.2 Fire alarm system required. <i>New buildings</i> that are required by Section 907.2 to have a <i>fire alarm system</i> and by Section 915.2 to have <i>carbon monoxide detectors</i> shall be connected to the <i>fire alarm system</i> in accordance with NFPA 72.</p>					
915.3.3	Fire alarm systems not required.	New in 2024	No	No	
<p>[F] 915.3.3 Fire alarm systems not required. In <i>new buildings</i> that are not required by Section 907.2 to have a <i>fire alarm system</i>, <i>carbon monoxide detection</i> shall be provided by one of the following:</p> <ol style="list-style-type: none"> 1. <i>Carbon monoxide detectors</i> connected to an <i>approved</i> carbon monoxide detection system in accordance with NFPA 72. 2. <i>Carbon monoxide detectors</i> connected to an <i>approved</i> combination system in accordance with NFPA 72. 3. <i>Carbon monoxide detectors</i> connected to an <i>approved fire alarm system</i> in accordance with NFPA 72. 4. Where <i>approved</i> by the fire code official, <i>carbon monoxide alarms</i> maintained in accordance with the manufacturer's instructions. 					
915.3.4	Installation.	New in 2024 instructions.	No	No	
<p>[F] 915.3.4 Installation. Carbon monoxide detection shall be installed in accordance with NFPA 72 and the manufacturer's instructions.</p>					
915.4.4	Interconnection.	New in 2024	No	No	
<p>[F] 915.4.4 Interconnection. Where more than one <i>carbon monoxide alarm</i> is required to be installed, <i>carbon monoxide alarms</i> shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms. Physical interconnection of <i>carbon monoxide alarms</i> shall not be required where <i>listed</i> wireless alarms are installed and all alarms sound upon activation of one alarm.</p>					
915.5.4	Occupant notification	New in 2024	Yes	No	

<p>[F] 915.5.4 Occupant notification. Activation of a <i>carbon monoxide detector</i> shall annunciate at the control unit and shall initiate audible and visible alarm notification throughout the <i>building</i>.</p> <p>Exception: Occupant notification is permitted to be limited to the area where the carbon monoxide <i>alarm signal</i> originated and other signaling zones in accordance with the fire safety plan, provided that the <i>alarm signal</i> from an activated <i>carbon monoxide detector</i> is automatically transmitted to an <i>approved on-site location</i> or <i>off-premises location</i>.</p>					
915.5.5	Duct Detection	Restricts the use of a technology not covered by referenced standards such as UL 2075/UL 2034. Per ICC, code change will not increase/decrease the cost of construction. (ICC CAH F104-21)	No	No	
<p>[F] 915.5.5 Duct detection. <i>Carbon monoxide detectors</i> placed in environmental air ducts or plenums shall not be used as a substitute for the required protection in Section 915.</p>					
917.2	Group E occupancies.	New in 2024: (ICC CAH F105-21)	Yes	No	
<p>[F] 917.2 Group E occupancies. Prior to construction of a new <i>building</i> containing a Group E occupancy <i>requiring a fire alarm system</i> and having an <i>occupant load</i> of 500 or more, a mass notification risk analysis shall be conducted in accordance with NFPA 72. Where the risk analysis determines a need for mass notification, an <i>approved mass notification system</i> shall be provided in accordance with the findings of the risk analysis.</p>					
<p>10 Means of Egress</p>					
<p>No Significant Changes</p>					
<p>11 Accessibility</p>					
1107.2 exception #1	Electrical vehicle charging stations	Exception #1 Electrical vehicle charging stations provided to serve Group R-3 and R-4 occupancies are not required to comply with this section. Consider redacting R-4. Exception #2 allows excluding Electric vehicle charging stations used exclusively by buses, trucks, other delivery vehicles, law enforcement vehicles and motor pools are not required to comply with this section. Consider including in WA law enforcement. Consider redacting all other vehicle mentions in #2	No	Yes Modify Existing	
<p>1107.2 Electrical vehicle charging stations. <i>Electrical vehicle charging stations</i> shall comply with Sections 1107.2.1 and 1107.2.2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <i>Electrical vehicle charging stations</i> provided to serve Group R-3 and R-4 occupancies are not required to comply with this section. <i>Electric vehicle charging stations used exclusively by buses, trucks, other delivery vehicles, law enforcement vehicles and motor pools are not required to comply with this section.</i> 					
<p>12 Interior Environment</p>					
1201.1	Scope	Expanded scope	Yes	No	Adopt change

1201.1 Scope. The provisions of this chapter shall govern ventilation, temperature control, lighting, yards and courts, sound transmission, enhanced classroom acoustics, interior space dimensions, access to unoccupied spaces, toilet and bathroom requirements and ultraviolet (UV) germicidal irradiation systems associated with the interior spaces of buildings.

1202.3	Unvented attic and unvented enclosed rafter assemblies	R Value percentages	No	No	Adopt change
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1202.3 Unvented attic and unvented enclosed rafter assemblies. Unvented attics and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all of the following conditions are met:

1. The unvented attic space is completely within the building thermal envelope.
2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, not less than a 1/4-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In Climate Zones 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall comply with either Item 5.1 or 5.2, and additionally Item 5.3.
 - 5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
 - 5.1.1. Where only air-impermeable insulation is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.
 - 5.1.2. Where air-permeable insulation is provided inside the building thermal envelope, it shall be installed in accordance with Item 5.1.1. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R-value percentages in Table 1202.3 for condensation control.
 - 5.1.3. Where both air-impermeable and air-permeable insulation are provided, the air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the R-value percentages in Table 1202.3 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation.
 - 5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.
 - 5.2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented attics shall meet the following requirements:
 - 5.2.1. A vapor diffusion port shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.
 - 5.2.2. The port area shall be greater than or equal to 1/100 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.
 - 5.2.3. The vapor permeable membrane in the vapor diffusion port shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM F96.

Exceptions:

1. Section 1202.3 does not apply to special use structures or enclosures such as swimming pool enclosures, data processing centers, hospitals or art galleries.
2. Section 1202.3 does not apply to enclosures in Climate Zones 5 through 8 that are humidified beyond 35 percent during the three coldest months.

TABLE 1202.3—INSULATION FOR CONDENSATION CONTROL	
CLIMATE ZONE	MINIMUM R-VALUE OF AIR-IMPERMEABLE INSULATION*
2B and 3B tile roof only	0 (none required)
1, 2A, 2B, 3A, 3B, 3C	10%
4C	20%
4A, 4B	30%

TABLE 1202.3—INSULATION FOR CONDENSATION CONTROL—continued	
CLIMATE ZONE	MINIMUM R-VALUE OF AIR-IMPERMEABLE INSULATION*
5	40%
6	50%
7	60%
8	70%
a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in Section C402.2.1 of the <i>International Energy Conservation Code</i> .	

1202.4.3.2	Conditioned Spaces	Change reference from International Energy Conservation Code to Washington State Energy Code	No	Yes	
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1202.4.3.2 Conditioned space. The crawl space shall be conditioned in accordance with the *International Mechanical Code* and the walls of the crawl space shall be insulated in accordance with the *International Energy Conservation Code*.

1206	SOUND TRANSMISSION	Engineering analysis shall be performed by a registered design professional.	Yes	No	Adopt change
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SECTION 1206—SOUND TRANSMISSION

1206.1 Scope. This section shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent *dwelling units* and *sleeping units* or between *dwelling units* and *sleeping units* and adjacent public areas.

1206.2 Airborne sound. Walls, partitions and floor-ceiling assemblies separating *dwelling units* and *sleeping units* from each other or from public or service areas shall have a sound transmission class of not less than 50 ~~where~~ tested in accordance with ASTM E90, or have a Normalized Noise Isolation Class (NNIC) rating of not less than 45 if field tested, in accordance with ASTM E336 for airborne noise. Alternatively, the sound transmission class of walls, partitions and floor-ceiling assemblies shall be established by engineering analysis based on a comparison of walls, partitions and floor-ceiling assemblies having sound transmission class ratings as determined by the test procedures set forth in ASTM E90. Engineering analysis shall be performed by a registered

design professional. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to entrance doors; however, such doors shall be tight fitting to the frame and sill.

1206.2.1 Masonry. The sound transmission class of concrete *masonry* and clay *masonry* assemblies shall be calculated in ~~accordance~~ accordance with TMS 302 or determined through testing in accordance with ASTM E90.

1206.3 Structure-borne sound. Floor-ceiling assemblies between *dwelling units* and *sleeping units* or between a *dwelling unit* or *sleeping unit* and a public or service area within the *structure* shall have an impact insulation class rating of not less than 50 ~~where~~ tested in accordance with ASTM E492, or have a Normalized Impact Sound Rating (NISR) of not less than 45 if field tested in ~~accordance~~ accordance with ASTM E1007. Alternatively, the impact insulation class of floor-ceiling assemblies shall be established by engineering analysis based on a comparison of floor-ceiling assemblies having impact insulation class ratings as determined by the test ~~procedures~~ procedures in ASTM E492. Engineering analysis shall be performed by a registered design professional.

1208	INTERIOR SPACE DIMENSIONS	change matches WA amendment	No	NO	Adopt change
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SECTION 1208—INTERIOR SPACE DIMENSIONS

1208.1 Minimum room widths. *Habitable spaces*, other than a kitchen, shall be not less than 7 feet (2134 mm) in any plan dimension. Kitchens shall have a clear passageway of not less than 3 feet (914 mm) between counter fronts and appliances or counter fronts and walls.

1208.2 Minimum ceiling heights. *Occupiable spaces, habitable spaces* and corridors shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor. Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.

Exceptions:

1. In one- and two-family *dwelling*s, beams or girders spaced not less than 4 feet (1219 mm) on center shall be permitted to project not more than 6 inches (152 mm) below the required ceiling height.
2. If any room in a *building* has a sloped ceiling, the prescribed ceiling height for the room is required in one-half the area thereof. Any portion of the room measuring less than 5 feet (1524 mm) from the finished floor to the ceiling shall not be included in any computation of the minimum area thereof.
3. The height of *mezzanines* and spaces below *mezzanines* shall be in accordance with Section 505.2.
4. Corridors contained within a *dwelling unit* or *sleeping unit* in a Group R occupancy shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.

1208.2.1 Furred ceiling. Any room with a furred ceiling shall be required to have the minimum ceiling height in two-thirds of the area thereof, but in no case shall the height of the furred ceiling be less than 7 feet (2134 mm).

1208.3 Dwelling unit size. *Dwelling units* shall have a minimum of 190 square feet (17.7 m²) of *habitable space*.

~~1208.3 Dwelling unit size. Dwelling units shall have a minimum of 190 square feet (17.7 m²) of habitable space.~~

1208.4 Room area. Every *dwelling unit* shall have not less than one room that shall have not less than 120 square feet (11.2 m²) of *net floor area*. *Sleeping units and other habitable rooms of a dwelling unit* shall have a *net floor area* of not less than 70 square feet (6.5 m²).

Exception: Kitchens are not required to be of a minimum floor area.

~~1208.4 Room area. Every dwelling unit shall have not less than one room that shall have not less than 120 square feet (11.2 m²) of net floor area. Sleeping units and other habitable rooms of a dwelling unit shall have a net floor area of not less than 70 square feet (6.5 m²).~~

EXCEPTION: Kitchens are not required to be of a minimum floor area.

1208.5 Efficiency dwelling units. *Efficiency dwelling units* shall conform to the requirements of the code except as modified herein:

1. The unit's *habitable space* shall comply with Sections 1208.1 through 1208.4.
2. The unit shall be provided with a separate closet.
3. For other than *Accessible, Type A* and *Type B dwelling units*, the unit shall be provided with a kitchen sink, cooking appliance and refrigerator, each having a clear working space of not less than 30 inches (762 mm) in front. Light and *ventilation* conforming to this code shall be provided.
4. The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.

~~1208.5 Efficiency dwelling units. Efficiency dwelling units shall conform to the requirements of the code except as modified herein:~~

- ~~1. The unit's habitable space shall comply with Sections 1208.1 through 1208.4.~~
- ~~2. The unit shall be provided with a separate closet.~~
- ~~3. For other than accessible, Type A and Type B dwelling units, the unit shall be provided with a kitchen sink, cooking appliance and refrigerator, each having a clear working space of not less than 30 inches (762 mm) in front. Light and ventilation conforming to this code shall be provided.~~
- ~~4. The unit shall be provided with a separate bathroom containing a water closet, lavatory, and bathtub or shower.~~

1210.2	Finish Materials	Clarification, expanded scope, renumbering	Yes	No	Adopt change
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<p>[P] 1210.2 Finish materials. Walls, floors and partitions in toilet and bathrooms shall comply with Sections 1210.2.1 through 1210.2.5.</p> <p>[P] 1210.2.1 Floors and wall bases. In other than <i>dwelling units</i>, toilet, bathing and shower room floor finish materials shall have a smooth, hard, nonabsorbent surface. The intersections of such floors with walls shall have a smooth, hard, nonabsorbent vertical base that extends upward onto the walls not less than 4 inches (102 mm).</p> <p>[P] 1210.2.2 Walls and partitions. Walls and partitions within 2 feet (610 mm) of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of not less than 4 feet (1219 mm) above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.</p> <p>Exception: This section does not apply to the following <i>buildings</i> and spaces:</p> <ol style="list-style-type: none"> 1. <i>Dwelling units</i> and <i>sleeping units</i>. 2. Toilet rooms that are not for use by the general public and that have not more than one water closet. <p>Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture.</p> <p>1210.2.3 Adult changing table surround. Walls and partitions within 2 feet (610 mm) measured horizontally from each end of the adult changing table and to a height of not less than 72 inches (1829 mm) above the floor shall have a smooth, hard, nonab- sorbent surface, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.</p> <p>[P] 1210.2.4 Showers. Shower compartments and walls above bathtubs with installed shower heads shall be finished with a smooth, nonabsorbent surface to a height not less than 72 inches (1829 mm) above the drain inlet.</p> <p>[P] 1210.2.5 Waterproof joints. Built-in tubs with showers shall have waterproof joints between the tub and adjacent wall.</p>					
1211	UV GERMICIDAL IRRADIATION SYSTEMS	UL 8802 Requirement	Yes	No	Adopt change
<p>SECTION 1211—UV GERMICIDAL IRRADIATION SYSTEMS</p> <p>1211.1 General. Where ultraviolet (UV) germicidal irradiation systems are provided, they shall be listed and labeled in accordance with UL 8802 and installed in accordance with their listing and the manufacturer's instruction.</p>					
13 Energy Efficiency					
No Significant Changes					
14 Performance Requirements					
No Significant Changes					
15 Roof Assemblies and Rooftop Structures					
No Significant Changes					
16 Structural Design					
1602.1	Notations	If there is no Washington Note An amendment is needed to add one.	No	No	An amendment may be needed if there is no WA Note Is in the ASCE 7-16 but not the ASCE 7-22

1602.1 Notations. The following notations are used in this chapter:

- D = Dead load.
- D_i = Weight of ice in accordance with Chapter 10 of ASCE 7.
- E = Combined effect of horizontal and vertical earthquake induced forces as defined in Section 12.4 of ASCE 7.
- F = Load due to fluids with well-defined pressures and maximum heights.
- F_o = Flood load in accordance with Chapter 5 of ASCE 7.
- H = Load due to lateral earth pressures, ground water pressure or pressure of bulk materials.
- L = Live load.
- L_r = Roof live load.
- $p_{g(ASD)}$ = Allowable stress design ground snow load.
- p_g = Ground snow load determined from Figures 1608.2(1) through 1608.2(4) and Table 1608.2.
- R = Rain load.
- S = Snow load.
- T = Cumulative effects of self-straining load forces and effects.
- V_{ASD} = Allowable stress design wind speed, mph (m/s) where applicable.
- V = Basic wind speed, V , mph (m/s) determined from Figures 1609.3(1) through 1609.3(4) or ASCE 7.
- V_T = Tornado speed, mph (m/s) determined from Chapter 32 of ASCE 7.
- W = Load due to wind pressure.
- W_i = Wind-on-ice in accordance with Chapter 10 of ASCE 7.

1603.1.3	Roof snow load data	Requirements to provide detailed snow load data was relaxed from areas where ground snow load is 15 psf, rather than 10 psf. Some additional information like Risk Category are required to be reported.	No	No	
<p>1603.1.3 Roof snow load data. The ground snow load, p_g, shall be indicated. In areas where the ground snow load, p_g, exceeds 15 pounds per square foot (psf) (0.72 kN/m²), the following additional information shall also be provided, regardless of whether snow loads govern the design of the roof:</p> <ol style="list-style-type: none"> 1. Flat-roof snow load, p_f. 2. Snow exposure factor, C_e. 3. Risk category. 4. Thermal factor, C_t. 5. Slope factor(s), C_s. 6. Drift surcharge load(s), p_d, where the sum of p_d and p_f exceeds 30 psf (1.44 kN/m²). 7. Width of snow drift(s), w. 8. Winter wind parameter for snow drift, W_s. 					
1603.1 & others	Construction Documents:General	Code now defines both ground snow load and allowable stress design ground snow load. Various changes throughout code to incorporate this change.	No	No	

<p>1603.1 General. <i>Construction documents shall show the material, size, section and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.9 shall be indicated on the construction documents.</i></p> <p>Exception: <i>Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:</i></p> <ol style="list-style-type: none"> 1. Floor and roof dead and live loads. 2. Ground snow load, p_g, and allowable stress design ground snow load, P_{allow}. 3. Basic wind speed, V, mph (m/s), and allowable stress design wind speed, V_{allow}, as determined in accordance with Section 1609.3.1 and wind exposure. 4. Seismic design category and site class. 5. Flood design data, if located in flood hazard areas established in Section 1612.3. 6. Design load-bearing values of soils. 7. Rain load data. 					
1603.1.9	Roof rain load data	additional information on roof drains and scupper information is required on drawings	No	No	
<p>1603.1.9 Roof rain load data. <i>Design rainfall intensity, i (in/hr) (cm/hr), and roof drain, scupper and overflow locations shall be shown regardless of whether rain loads govern the design.</i></p>					
1604.4	Analysis	Clarification of flexible versus rigid diaphragms	No	No	
<p>1604.4 Analysis. <i>Load effects on structural members and their connections shall be determined by methods of structural analysis that take into account equilibrium, general stability, geometric compatibility and both short- and long-term material properties.</i></p> <p><i>Members that tend to accumulate residual deformations under repeated service loads shall have included in their analysis the effects of added deformations expected to occur during their service life.</i></p> <p><i>Any system or method of construction to be used shall be based on a rational analysis in accordance with well-established principles of mechanics. Such analysis shall result in a system that provides a complete load path capable of transferring loads from their point of origin to the load-resisting elements.</i></p> <p><i>The total lateral force shall be distributed to the various vertical elements of the lateral force-resisting system in proportion to their rigidities, considering the rigidity of the horizontal bracing system or diaphragm. Rigid elements assumed not to be a part of the lateral force-resisting system are permitted to be incorporated into buildings provided that their effect on the action of the system is considered and provided for in the design. Where a diaphragm is not permitted to be idealized as either flexible or rigid in accordance with ASCE 7 or for wood diaphragms in accordance with AWC SDPWS, the structure shall be analyzed and designed utilizing one of the following procedures:</i></p> <ol style="list-style-type: none"> 1. <i>An envelope analysis of the structure using a flexible and rigid diaphragm analysis separately and designing each component for the more severe load condition.</i> 2. <i>A semirigid diaphragm analysis and design.</i> <p><i>Where required by ASCE 7, provisions shall be made for the increased forces induced on resisting elements of the structural system resulting from torsion due to eccentricity between the center of application of the lateral forces and the center of rigidity of the lateral force-resisting system.</i></p> <p><i>Every structure shall be designed to resist the effects caused by the forces specified in this chapter, including overturning, uplift and sliding. Where sliding is used to isolate the elements, the effects of friction between sliding elements shall be included as a force.</i></p>					
1604.5 exception 2	Risk Category	Most free standing parking garages shall be Risk Category 2	No	No	

1604.5 Risk category. Each *building* and *structure* shall be assigned a *risk category* in accordance with Table 1604.5. Where a referenced standard specifies an occupancy category, the *risk category* shall not be taken as lower than the occupancy category specified therein. Where a referenced standard specifies that the assignment of a *risk category* be in accordance with ASCE 7, Table 1.5-1, Table 1604.5 shall be used in lieu of ASCE 7, Table 1.5-1.

Exceptions:

1. The assignment of *buildings* and *structures* to Tsunami *Risk Categories* III and IV is permitted to be in accordance with Section 6.4 of ASCE 7.
2. Freestanding parking garages not used for the storage of emergency services vehicles or not providing means of egress for *buildings* or *structures* assigned to a higher risk category shall be assigned to Risk Category II.

Table 1604.5	Risk Category	Group I-3 occupancies, except for condition 1 was changed from Risk Category 3 to Risk Category 4	Yes	No	
		Power-generating stations that are required to be Risk Category 3 were specified as > 75 MW	No	No	
		General statement defining Risk Category 4 expanded to include, "and buildings where loss of function represents a substantial hazard to occupants or users,"	Yes	No	
		Risk Category 4 now includes "Public utility facilities providing power generation, potable water treatment, or wastewater treatment."	Yes	No	

TABLE 1604.5—RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES

RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: <ul style="list-style-type: none"> • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities.
II	Buildings and other structures except those listed in Risk Categories I, III and IV.
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: <ul style="list-style-type: none"> • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing one or more public assembly spaces, each having an occupant load greater than 300 and a cumulative occupant load of these public assembly spaces of greater than 2,500. • Buildings and other structures containing Group E or Group I-4 occupancies or combination thereof, with an occupant load greater than 250. • Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. • Group I-3, Condition 1 occupancies. • Any other occupancy with an occupant load greater than 5,000.* • Power-generating stations with individual power units rated 75 MW_{ac} (megawatts, alternating current) or greater, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: <ul style="list-style-type: none"> • Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the <i>International Fire Code</i>; and

	<ul style="list-style-type: none"> • Are sufficient to pose a threat to the public if released^b. 	<p>Buildings and other structures designated as essential facilities and buildings where loss of function represents a substantial hazard to occupants or users, including but not limited to:</p> <ul style="list-style-type: none"> • Group I-2, Condition 2 occupancies. • Ambulatory care facilities having emergency surgery or emergency treatment facilities. • Group I-3 occupancies other than Condition 1. • Fire, rescue, ambulance and police stations and emergency vehicle garages. • Designated earthquake, hurricane or other emergency shelters. • Designated emergency preparedness, communications and operations centers and other facilities required for emergency response. • Public utility facilities providing power generation, potable water treatment, or wastewater treatment. • Power-generating stations and other public utility facilities required as emergency backup facilities for <i>Risk Category IV</i> structures. • Buildings and other structures containing quantities of highly toxic materials that: • Exceed maximum allowable quantities per control area as given in Table 307.1(2) or per outdoor control area in accordance with the <i>International Fire Code</i>; and • Are sufficient to pose a threat to the public if released^b. • Aviation control towers, air traffic control centers and emergency aircraft hangars. • Buildings and other structures having critical national defense functions. • Water storage facilities and pump structures required to maintain water pressure for fire suppression. <p>a. For purposes of occupant load calculation, occupancies required by Table 1004.5 to use <i>gross floor area</i> calculations shall be permitted to use <i>net floor areas</i> to determine the total occupant load. The floor area for vehicular drive aisles shall be permitted to be excluded in the determination of net floor area in parking garages.</p> <p>b. Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided that it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.</p>			
1604.5.1	Multiple occupancies	Clarification on when "systems" for multiple occupancies are required to be assigned to higher risk category.	No	No	
<p>1604.5.1 Multiple occupancies. Where a <i>building or structure</i> is occupied by two or more occupancies not included in the same <i>risk category</i>, it shall be assigned the classification of the highest <i>risk category</i> corresponding to the various occupancies. Where <i>buildings or structures</i> have two or more portions that are structurally separated, each portion shall be separately classified. Where a separated portion of a <i>building or structure</i> provides required access to, required egress from or shares life safety systems, designated seismic systems, emergency power systems, or emergency and egress lighting systems with another portion having a higher <i>risk category</i>, or provides required electrical, communications, mechanical, plumbing or conveying support to another portion assigned to <i>Risk Category IV</i>, both portions shall be assigned to the higher <i>risk category</i>.</p> <p>Exception: Where a <i>storm shelter</i> designed and constructed in accordance with ICC 500 is provided in a <i>building, structure</i> or portion thereof normally occupied for other purposes, the <i>risk category</i> for the normal occupancy of the <i>building</i> shall apply unless the <i>storm shelter</i> is a designated emergency shelter in accordance with Table 1604.5.</p>					
1604.5.2	Photovoltaic (PV) panel systems	section added	NO	No	
<p>1604.5.2 Photovoltaic (PV) panel systems. Photovoltaic (PV) panel systems and <i>elevated PV support structures</i> shall be assigned a <i>risk category</i> as follows:</p> <ol style="list-style-type: none"> 1. <i>Ground-mounted PV panel systems</i> serving only Group R-3 <i>buildings</i> shall be assigned to <i>Risk Category I</i>. 2. <i>Ground-mounted PV panel systems</i> other than those described in Items 1 and 5 shall be assigned to <i>Risk Category II</i>. 3. <i>Elevated PV support structures</i> other than those described in Items 4, 5 and 6 shall be assigned to <i>Risk Category II</i>. 4. <i>Rooftop-mounted PV panel systems</i> and <i>elevated PV support structures</i> installed on top of <i>buildings</i> shall be assigned to the same <i>risk category</i> as the <i>risk category</i> of the <i>building</i> on which they are mounted. 5. <i>PV panel systems</i> and <i>elevated PV support structures</i> paired with energy storage systems (ESS) and serving as a dedicated stand-alone source of backup power for <i>Risk Category IV</i> <i>buildings</i> shall be assigned to <i>Risk Category IV</i>. 6. <i>Elevated PV support structures</i> where the usable space underneath is used for parking of emergency vehicles shall be assigned to <i>Risk Category IV</i>. 					
Table 1607.1 & 1607.6.1	Helipads	Section was reworded but overall loading remains essentially the same.	No	No	

TABLE 1607.1—MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_o , AND MINIMUM CONCENTRATED LIVE LOADS					
OCCUPANCY OR USE		UNIFORM (psf)	CONCENTRATED (pounds)	ALSO SEE SECTION	
1.	Apartments (see residential)	—	—	—	
2.	Access floor systems	Office use	50	2,000	—
		Computer use	100	2,000	—
3.	Armories and drill rooms	150*	—	—	
4.	Assembly areas	Fixed seats (fastened to floor)	60*	—	—
		Lobbies	100*	—	—
		Movable seats	100*	—	—
		Stage floors	150*	—	—
		Platforms (assembly)	100*	—	—
		Bleachers, folding and telescopic seating and grandstands	100* (See Section 1607.18)	—	—
		Stadiums and arenas with fixed seats (fastened to the floor)	60* (See Section 1607.18)	—	—
	Other assembly areas	100*	—	—	
5.	Balconies and decks	1.5 times the live load for the area served, not required to exceed 100	—	—	
6.	Catwalks for maintenance and service access	40	300	—	
7.	Cornices	60	—	—	
8.	Corridors	First floor	100	—	—
		Other floors	Same as occupancy served except as indicated	—	—
9.	Dining rooms and restaurants	100*	—	—	
10.	Dwellings (see residential)	—	—	—	
11.	Elevator machine room and control room grating (on area of 2 inches by 2 inches)	—	300	—	
12.	Finish light floor plate construction (on area of 1 inch by 1 inch)	—	200	—	
13.	Fire escapes		100	—	—
		On single-family dwellings only	40	—	—
14.	Fixed ladders	See Section 1607.10	—	—	
15.	Garages and vehicle floors	Passenger vehicle garages	40*	See Section 1607.7	—
		Trucks and buses	See Section 1607.8	—	—
		Fire trucks and emergency vehicles	See Section 1607.8	—	—
		Forklifts and movable equipment	See Section 1607.8	—	—
16.	Handrails, guards and grab bars	See Section 1607.9	—	—	
17.	Helipads	Helicopter takeoff weight 3,000 pounds or less	40*	See Section 1607.6.1	Section 1607.6
		Helicopter takeoff weight more than 3,000 pounds	60*	See Section 1607.6.1	Section 1607.6
18.	Hospitals	Corridors above first floor	80	1,000	—
		Operating rooms, laboratories	60	1,000	
		Patient rooms	40	1,000	
19.	Hotels (see residential)	—	—	—	
		Corridors above first floor	80	1,000	—

20.	Libraries	Reading rooms	60	1,000	—
		Stack rooms	150 ^a	1,000	Section 1607.17
TABLE 1607.1—MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, <i>L_s</i>, AND MINIMUM CONCENTRATED LIVE LOADS—continued					
OCCUPANCY OR USE			UNIFORM (psf)	CONCENTRATED (pounds)	ALSO SEE SECTION
21.	Manufacturing	Heavy	250 ^a	3,000	—
		Light	125 ^b	2,000	
22.	Marquees, except one- and two-family dwellings		75	—	—
23.	Office buildings	Corridors above first floor	80	2,000	—
		File and computer rooms shall be designed for heavier loads based on anticipated occupancy	—	—	
		Lobbies and first-floor corridors	100	2,000	
		Offices	50	2,000	
24.	Penal institutions	Cell blocks	40	—	—
		Corridors	100	—	
25.	Public restrooms		Same as live load for area served but not required to exceed 60 psf	—	—
26.	Recreational uses	Bowling alleys, poolrooms and similar uses	75 ^a	—	—
		Dance halls and ballrooms	100 ^a		
		Gymnasiums	100 ^a		
		Theater projection, control, and follow spot rooms	50		
		Ice skating rinks	250 ^b		
		Roller skating rinks	100 ^a		
27.	Residential	One- and two-family dwellings:		—	Section 1607.21
		Uninhabitable attics without storage	10		
		Uninhabitable attics with storage	20		
		Habitable attics and sleeping areas	30		
		Canopies, including marquees	20		
		All other areas	40		
		Hotels and multifamily dwellings:			
		Private rooms and corridors serving them	40		
		Public rooms	100 ^a		
Corridors serving public rooms	100				
28.	Roofs	Ordinary flat, pitched, and curved roofs (that are not occupiable)	20	—	Section 1607.14
		Roof areas used for assembly purposes	100 ^a	—	
		Roof areas used for occupancies other than assembly	Same as occupancy served	—	
		Vegetative and landscaped roofs:			
		Roof areas not intended for occupancy	20	—	
		Roof areas used for assembly purposes	100 ^a	—	
		Roof areas used for occupancies	—	—	

	other than assembly	Same as occupancy served	—
	Awnings and canopies:		
	Fabric construction supported by a skeleton structure	5*	—
	All other construction, except one- and two-family dwellings	20	—

TABLE 1607.1—MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_s , AND MINIMUM CONCENTRATED LIVE LOADS—continued					
OCCUPANCY OR USE		UNIFORM (psf)	CONCENTRATED (pounds)	ALSO SEE SECTION	
28.	Roofs—continued	Primary roof members exposed to a work floor:			
		Single panel point of lower chord of roof trusses or any point along primary structural members supporting roofs over manufacturing, storage warehouses, and repair garages	—	2,000	Section 1607.15
		All other primary roof members	—	300	
		All roof surfaces subject to maintenance workers	—	300	
Classrooms	40	1,000	—		
Corridors above first floor	80	1,000			
First-floor corridors	100	1,000			
30.	Scuttles, skylight ribs and accessible ceilings	—	200	—	
31.	Sidewalks, vehicular driveways and yards, subject to trucking	250 ^a	8,000	Section 1607.19	
32.	Stairs and exits	One- and two-family dwellings	40	300	Section 1607.20
		All other	100	300	Section 1607.20
33.	Storage areas above ceilings	20	—	—	
34.	Storage warehouses (shall be designed for heavier loads if required for anticipated storage)	Heavy	250 ^a	—	—
		Light	125 ^a		
35.	Stores	Retail:			
		First floor	100	1,000	—
		Upper floors	75	1,000	
		Wholesale, all floors	125 ^a	1,000	
36.	Vehicle barriers	See Section 1607.11		—	
37.	Walkways and elevated platforms (other than exitways)	60	—	—	
38.	Yards and terraces, pedestrian	100 ^a	—	—	

For SI: 1 inch = 25.4 mm, 1 square inch = 645.16 mm², 1 square foot = 0.0929 m², 1 pound per square foot = 0.0479 kN/m², 1 pound = 0.004448 kN.
 a. Live load reduction is not permitted.
 b. Live load reduction is only permitted in accordance with Section 1607.13.1.2 or Item 1 of Section 1607.13.2.
 c. Live load reduction is only permitted in accordance with Section 1607.13.1.3 or Item 2 of Section 1607.13.2.

1607.6 Helipads. Helipads shall be marked to indicate the maximum takeoff weight. The takeoff weight limitation shall be indicated in units of thousands of pounds and placed in a box that is located in the bottom right corner of the landing area as viewed from the primary approach path. The box shall be not less than 5 feet (1524 mm) in height.

1607.6.1 Concentrated loads. Helipads shall be designed for the following concentrated live loads:

1. A single concentrated live load, L , of 3,000 pounds (13.35 kN) applied over an area of 4.5 inches by 4.5 inches (114 mm by 114 mm) and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated load is not required to act concurrently with other uniform or concentrated live loads.
2. Two single concentrated live loads, L , 8 feet (2438 mm) apart applied on the landing pad (representing the helicopter's two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum takeoff weight of the helicopter, and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated loads shall be applied over an area of 8 inches by 8 inches (203 mm by 203 mm) and are not required to act concurrently with other uniform or concentrated live loads.

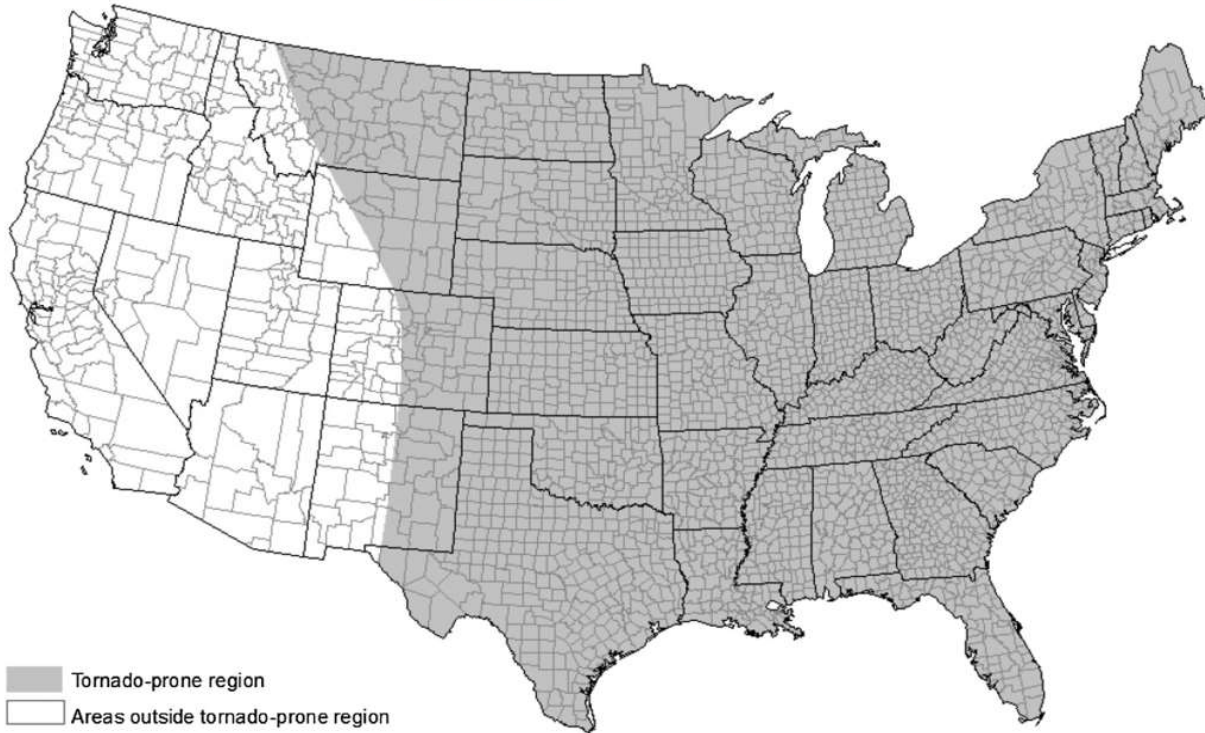
1607.3	Uniform live loads	Clarification on partially loading of floors and roofs.	No	No	
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<p>1607.3 Uniform live loads. The <i>live loads</i> used in the design of <i>buildings</i> and <i>other structures</i> shall be the maximum loads expected by the intended use or occupancy but shall not be less than the minimum uniformly distributed <i>live loads</i> given in Table 1607.1. <i>Live loads</i> acting on a sloping surface shall be assumed to act vertically on the horizontal projection of that surface.</p> <p>1607.3.1 Partial loading of floors. Where uniform floor <i>live loads</i> are involved in the design of structural members arranged so as to create continuity, the minimum applied loads shall be the full dead loads on all spans in combination with the floor <i>live loads</i> on spans selected to produce the greatest <i>load effect</i> at each location under consideration. Uniform floor <i>live loads</i> applied to selected spans are permitted to be reduced in accordance with Section 1607.13.</p> <p>1607.3.2 Partial loading of roofs. Where uniform roof <i>live loads</i> are reduced to less than 20 pounds per square foot (0.96 kN/m²) in accordance with Section 1607.14.1 and are applied to the design of structural members arranged so as to create continuity, the reduced roof <i>live load</i> shall be applied to adjacent spans or to alternate spans, whichever produces the most unfavorable <i>load effect</i>.</p>					
1607.5	Partition Loading	Clairfy that LL reducion is not allowed for partition loads, unless live load is > 80 psf	No	No	
<p>1607.5 Partition loads. In office <i>buildings</i> and in other buildings where partition locations are subject to change, provisions for partition weight shall be made, whether or not partitions are shown on the <i>construction documents</i>. The partition <i>load</i> shall be not less than a <i>live load</i> of 15 pounds per square foot (0.72 kN/m²) and live load reductions in accordance with Section 1607.13 are not permitted to be applied to the partition loads.</p> <p>Exception: A partition <i>live load</i> is not required where the minimum specified <i>live load</i> is 80 pounds per square foot (3.83 kN/m²) or greater.</p>					
1607.8.2	Fire truck and emergency vehicles	editorial changes and clarifying that emergency vehicle loads are not combined with other live loads	No	No	
<p>1607.8.2 Fire truck and emergency vehicles. Where a <i>structure</i> or portions of a <i>structure</i> are accessed by fire department veh-icles and other similar emergency vehicles, those portions of the structure subject to such loads shall be designed for the greater of the following <i>loads</i>:</p> <ol style="list-style-type: none"> 1. The actual operational <i>loads</i>, including outrigger reactions and contact areas of the vehicles as stipulated and <u>approved</u> by the <i>building official</i>. 2. The live loading specified in Section 1607.8.1. <p>Emergency vehicle <i>loads</i> need not be assumed to act concurrently with other uniform <i>live loads</i>.</p>					
1607.13.2	Alternative uniform live load reduction	Live Load reduction was re-arranged, but overall loading is the same	No	No	

<p>1607.13.2 Alternative uniform live load reduction. As an alternative to Section 1607.13.1 and subject to the limitations of Table 1607.1, uniformly distributed <i>live loads</i> are permitted to be reduced in accordance with the following provisions. Such reductions shall apply to slab systems, beams, girders, columns, piers, walls and foundations.</p> <p>1. For <i>live loads</i> not exceeding 100 pounds per square foot (4.79 kN/m²), the design <i>live load</i> for structural members supporting 150 square feet (13.94 m²) or more is permitted to be reduced in accordance with Equation 16-8.</p> <p>Equation 16-8 $R = 0.08(A - 150)$ For SI: $R = 0.861(A - 13.94)$ where: A = Area of floor supported by the member, square feet (m²). R = Reduction in percent. Such reduction shall not exceed the smallest of: 1.1. 40 percent for members supporting one floor. 1.2. 60 percent for members supporting two or more floors. 1.3. R as determined by the following equation: Equation 16-9 $R = 23.1(1 + D/L_s)$ where: D = Dead load per square foot (m²) of area supported. L_s = Unreduced <i>live load</i> per square foot (m²) of area supported.</p> <p>2. A reduction shall not be permitted where the <i>live load</i> exceeds 100 pounds per square foot (4.79 kN/m²) except that the design <i>live load</i> for members supporting two or more floors is permitted to be reduced by not greater than 20 percent.</p> <p>Exception: For uses other than storage, where <i>approved</i>, additional <i>live load</i> reductions shall be permitted where shown by the <i>registered design professional</i> that a rational approach has been used and that such reductions are warranted.</p>					
1608	Snow Loads	Clarification on snow loads being "strength based" or "allowable stress"	Maybe	Yes	Proposal Needed. Snow load tables in ASCE have changes. Are WA maps are more appropriate, and are more sensitive to elevation changes.
<p>1608.2 Ground snow loads. The ground snow loads to be used in determining the design snow loads for roofs shall be determined in accordance with the <i>reliability-targeted (strength based) ground snow load values in Chapter 7 of ASCE 7</i> or Figures 1608.2(1) through 1608.2(4) for the contiguous United States and Table 1608.2 for Alaska. Site-specific case studies shall be <i>determined in accordance with Chapter 7 of ASCE 7 and shall be approved by the building official</i>. Snow loads are zero for Hawaii, except in mountainous regions as <i>approved</i> by the <i>building official</i>.</p>					
1609.5 & others	Tornado Loads	Tornado loading was added and involves many scitons, but per Figure 1609.5, all of the State of Washington is "outside the tornado-prone region" so these changes do not impact the State building code.	No	No	

1609.5 Tornado loads. The design and construction of *Risk Category III and IV buildings and other structures* located in the tornado-prone region as shown in Figure 1609.5 shall be in accordance with Chapter 32 of ASCE 7, except as modified by this code.

FIGURE 1609.5—TORNADO-PRONE REGION



1611	Rain loads	The Design Rain Loads section (1611.1) added the d_p term to the load equation which is for the additional depth of water due to deflection of the roof under water and dead load deflection	No	No	
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1611.1 Design rain loads. Each portion of a roof shall be designed to sustain the *load* of rainwater as per the requirements of Chapter 8 of ASCE 7. Rain loads shall be based on the summation of the static head, d_s , hydraulic head, d_h , and ponding head, d_p , using Equation 16-20. The hydraulic head shall be based on hydraulic test data or hydraulic calculations assuming a flow rate corresponding to a rainfall intensity equal to or greater than the 15-minute duration storm with return period given in Table 1611.1. Rainfall intensity shall be determined in inches per hour for 15-minute duration storms for the risk categories given in Table 1611.1. The ponding head shall be based on structural analysis as the depth of water due to deflections of the roof subjected to unfactored rain load and unfactored *dead load*.

Equation 16-20 $R = 5.2(d_s + d_h + d_p)$

For SI: $R = 0.0098(d_s + d_h + d_p)$

where:

d_h = Hydraulic head equal to the depth of water on the undeflected roof above the inlet of the secondary drainage system for structural loading (SDSL) required to achieve the design flow, in inches (mm).

d_p = Ponding head equal to the depth of water due to deflections of the roof subjected to unfactored rain load and unfactored *dead load*, in inches (mm).

d_s = Static head equal to the depth of water on the undeflected roof up to the inlet of the secondary drainage system for structural loading (SDSL), in inches (mm).

R = Rain load, in pounds per square foot (kN/m²).

SDSL is the roof drainage system through which water is drained from the roof when the drainage systems listed in ASCE 7 Section 8.2 (a) through (d) are blocked or not working.

T 1611.1	Rain loads	Table 1611.1 was also added for design storm return periods by Risk Category; in 2021 this was all based on a 100-year return period.	No	No	
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TABLE 1611.1—DESIGN STORM RETURN PERIOD BY RISK CATEGORY

RISK CATEGORY	DESIGN STORM RETURN PERIOD
I & II	100 years
III	200 years
IV	500 years

1613.2	Determination of seismic design category	Language changed to incorporate language from ASCE 7-22, including adding Site Class DE.	No	No	
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1613.2 Determination of seismic design category. Structures shall be assigned to a *seismic design category* based on one of the following methods unless the authority having jurisdiction or geotechnical data determines that Site Class DE, E or F soils are present at the site:

1. Based on the structure *risk category* using Figures 1613.2(1) through 1613.2(7).
2. Determined in accordance with ASCE 7.

Where Site Class DE, E or F soils are present, the *seismic design category* shall be determined in accordance with ASCE 7.

1613.4	Amendments to ASCE 7	insert WAC language, ASCE 7-22 incorporates most if not all of WAC amendments. We may get rid of WAC Amendment? More study needed.	No	No	
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1613.4 Amendments to ASCE 7. The provisions of Section 1613.4 shall be permitted as an amendment to the relevant provisions of ASCE 7. The text of ASCE 7 shall be amended as indicated in Sections 1613.4.1 through 1613.4.6.

1615	Tsunami Loads	Delete model code section and include WAC	No	No	
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1615.1 General. The design and construction of Risk Category III and IV buildings and structures located in the Tsunami Design Zones shall be in accordance with Chapter 6 of ASCE 7-22, except as modified by this code. Wherever ASCE 7 is referenced herein, it shall refer to ASCE 7-22, within the extent of ASCE 7 Chapter 6 and WAC 51-50-1615.

USER NOTE: The intent of the Washington state amendments to ASCE 7 Chapter 6 (Tsunami Loads and Effects) is to require use of the Washington Tsunami Design Zone maps to determine inundation limits, i.e., when a site is within a tsunami design zone. The Washington state department of natural resources has parameters for tsunami inundation depth and flow velocity available for all of Washington's coastal waters and tidally influenced riverine systems (WA-TDZ). These parameters are required to be used in lieu of ASCE Tsunami Design Geodatabase, and as a basis for comparison in the probabilistic tsunami hazard analysis in this chapter.

1615.2 Modifications to ASCE 7. The text of Chapter 6 of ASCE 7 shall be modified as indicated in this section.

1615.2.1 ASCE 7 Section 6.1.1. Replace the third paragraph of ASCE 7 Section 6.1.1 with the following and remove the associated exception:

The Tsunami Design Zone shall be determined using the Washington Tsunami Design Zone maps (WA-TDZ). The WA-TDZ maps are available at <https://www.dnr.wa.gov/wa-tdz>.

1615.2.2 ASCE 7 Section 6.1.1. Add new fifth paragraph and user note to ASCE 7 Section 6.1.1 to read as follows:

Whenever a Tsunami Design Zone or Fig. 6.1-1 is referenced in ASCE 7 Chapter 6, the WA-TDZ maps shall be used.

USER NOTE: Tsunami design zone and design parameters may be obtained from the Washington state department of natural resources.

NOTE: See <https://www.dnr.wa.gov/wa-tdz>.

1615.2.3 ASCE 7 Section 6.2. Modify ASCE 7 Section 6.2 definitions to read as follows:

ASCE TSUNAMI DESIGN GEODATABASE: Not Adopted.

USER NOTE: The ASCE tsunami design geodatabase is not adopted for design purposes in Washington state.

MAXIMUM CONSIDERED TSUNAMI: A probabilistic tsunami having a two percent probability of being exceeded in a 50-year period or a 2,475-year mean recurrence, or a deterministic assessment considering the maximum tsunami that can reasonably be expected to affect a site.

TSUNAMI DESIGN ZONE MAP: The Washington Tsunami Design Zone maps (WA-TDZ) designating the potential horizontal inundation limit of the Maximum Considered Tsunami found at www.dnr.wa.gov/wa-tdz.

1615.2.4 ASCE 7 Section 6.2. Add new definitions to ASCE 7 Section 6.2 to read as follows:

WASHINGTON TSUNAMI DESIGN ZONE MAP (WA-TDZ): The Washington department of natural resources maps of potential tsunami inundation limits for the Maximum Considered Tsunami, designated as follows:

Columbia River	DOGAMI SP-51 (L1 scenario) adopted by WA DNR
Outer Coast and Strait area	MS 2022-01
Port Townsend	MS 2018-03 (partially superseded by MS 2022-01)
Puget Sound	MS 2021-01 (revised 2022)
San Juan Islands	MS 2016-01 (partially superseded on its eastern edge by MS 2021-01)
Southern Washington Coast	MS 2018-01

The Washington state department of natural resources geodatabase of design parameters for tsunami inundation depth, flow velocity, offshore tsunami amplitude, predominant period, and tsunami design zone maps for a maximum considered tsunami is available at the Washington TDZ website (<https://www.dnr.wa.gov/wa-tdz>).

1615.2.5 ASCE 7 Section 6.5.1. Add new second paragraph to ASCE 7 Section 6.5.1 to read as follows:

6.5.1 Tsunami Risk Category II and III buildings and other structures. The Maximum Considered

Tsunami inundation depth and tsunami flow velocity characteristics at a Tsunami Risk Category II or III building or other structure shall be determined by the WA-TDZ maps. Those parameters shall be used as the Maximum Considered Tsunami inundation depth and tsunami flow velocity characteristics in lieu of the Energy Grade Line Analysis in Section 6.6.

1615.2.6 ASCE 7 Section 6.5.1.1. Modify the first paragraph of ASCE 7 Section 6.5.1.1 to read as follows:

6.5.1.1 Runup evaluation for areas where no map values are given. For Tsunami Risk Category II and III buildings and other structures where no mapped inundation limit is shown in the Tsunami Design Zone map, the ratio of tsunami runup elevation above Mean High Water Level to Offshore Tsunami Amplitude, R/HT , shall be permitted to be determined using the surf similarity parameter ξ_{100} , according to Eqs. (6.5-2a, b, c, d, or e) and Fig. 6.5-1.

1615.2.7 ASCE 7 Section 6.5.2. Modify the paragraph and the exception, to read as follows:

6.5.2 Tsunami Risk Category IV buildings and other structures. A site-specific Probabilistic Tsunami Hazard Analysis (PTHA) shall be performed for Tsunami Risk Category IV buildings and other structures. Site-specific velocities determined by site-specific PTHA determined to be less than the design flow velocities determined from the WA-TDZ maps shall be subject to the limitation in Section 6.7.6.8. Site-specific velocities determined to be greater than the WA-TDZ map velocities shall be used.

EXCEPTION: For structures other than Tsunami Vertical Evacuation Refuge Structures, a site-specific Probabilistic Tsunami Hazard Analysis need not be performed where the inundation depth determined from the WA-TDZ maps is determined to be less than 12 ft (3.66 m) at any point within the location of the Tsunami Risk Category IV structure.

1615.2.8 ASCE 7 Section 6.6.1. Replace ASCE 7 Section 6.6.1 to read as follows:

6.6.1 Maximum inundation depth and flow velocities. The maximum inundation depths and flow velocities associated with the stages of tsunami flooding are determined by the WA-TDZ maps. Flow velocity for design purposes shall not be taken as less than 10 ft/s (3.0 m/s) and need not be taken as greater than the lesser of $1.5(gh_{max})^{1/2}$ and 50 ft/s (15.2 m/s).

1615.2.9 ASCE 7 Section 6.7. Replace ASCE 7 Section 6.7 with the following and add a user note:

When required by Section 6.5, the inundation depths and flow velocities shall be determined by site-specific inundation studies complying with the requirements of this section. Site-specific analyses shall use an integrated generation, propagation, and inundation model that replicates the given offshore tsunami waveform amplitude and period from the seismic sources given in Section 6.7.2.

USER NOTE: WA-TDZ maps are based on an integrated generation, propagation, and inundation model replicating waveforms from the seismic sources specific to Washington state. See <https://www.dnr.wa.gov/wa-tdz>.

1615.2.10 ASCE 7 Table 6.7-2. Modify ASCE 7 Table 6.7-2 to read as follows:

Table 6.7-2 Maximum Moment Magnitude

Subduction Zone	Moment Magnitude
	MW_{max}
Alaskan-Aleutian	9.2
Cascadia	9.0
Chile-Peru	9.5
Izu-Bonin-Mariana	9.0
Kamchatka-Kurile and Japan Trench	9.4

1615.2.11 ASCE 7 Section 6.7.5.1. Modify ASCE 7 Section 6.7.5.1 Item 4, Item 5, and Item 6 to read as follows:

6.7.5.1 Offshore tsunami amplitude for distant seismic sources. Offshore tsunami amplitude shall be probabilistically determined in accordance with the following:

4. The extent of offshore tsunami amplitude points considered for the site shall include the following:

(a) For outer coast sites, the extent shall include points within at least 40 mi (64.4 km) but not exceeding 50 mi (80.5 km) of projected length along the coastline, centered on the site within a tolerance of plus or minus 6 mi (9.7 km);

(b) Reserved;

(c) For sites within bays or inland waterways (such as the Strait of Juan de Fuca), the designated

center or the computed offshore tsunami amplitude points shall be taken offshore of the mouth of the bay or waterway centered in accordance with criteria (a) above;

(d) For island locations where the projected width of the island is less than 40 mi (64.4 km), it shall be permitted to consider the extent of offshore tsunami amplitude points corresponding to the projected width of the island. Shorter extents of offshore tsunami amplitude points shall be permitted for island locations, but shall not be less than 10 mi (16.1 km);

(e) In addition to the above, the tsunami source development and inundation modeling are subject to an independent peer review by a tsunami modeler approved by the Authority Having Jurisdiction, who shall present a written report to the Authority Having Jurisdiction as to the hazard consistency of the modeling with the requirements of Section 6.7.

5. The mean value of the computed offshore tsunami wave amplitudes shall be not less than 100 percent of the mean value for the coinciding offshore tsunami amplitude data given by the WA-TDZ maps.

6. The individual values of the computed offshore tsunami wave amplitude shall be not less than 80 percent of the coinciding offshore tsunami amplitude values given by the WA-TDZ maps.

1615.2.12 ASCE 7 Section 6.7.5.3. Modify ASCE 7 Section 6.7.5.3.1(b) and (c) to read as follows:

(b) The mean value of the computed offshore tsunami amplitudes is at least 85 percent of the mean value for the coinciding offshore tsunami amplitude data of the WA-TDZ maps.

(c) The values of the computed offshore tsunami wave amplitude are not less than 75 percent of the coinciding offshore tsunami amplitude values of the WA-TDZ maps.

1615.2.13 ASCE 7 Section 6.7.6.2. Modify ASCE 7 Section 6.7.6.2 and add a user note to read as follows:

6.7.6.2 Seismic subsidence before tsunami arrival. Where the seismic source is a local earthquake event, the Maximum Considered Tsunami inundation shall be determined for an overall elevation subsidence value directly computed for the seismic source mechanism.

USER NOTE: WA-TDZ maps include computed subsidence and uplift (where applicable) in the inundation results. See <https://www.dnr.wa.gov/wa-tdz>.

1615.2.14 ASCE 7 Figure 6.7-3. Remove Figure 6.7-3 and the associated note.

1615.2.15 ASCE 7 Section 6.8.9. Modify the first sentence of ASCE 7 Section 6.8.9 to read as follows:

6.8.9 Seismic effects on the foundations preceding maximum considered tsunami. Where designated in the Tsunami Design Zone map as a site subject to a tsunami from a local earthquake, the structure shall be designed for the preceding co-seismic effects.

17 Special Inspections and Tests

1705.2.2	Structural stainless steel	Inspection requirements for stainless steel added.	No	No	
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1705.2.2 Structural stainless steel. Special inspections and nondestructive testing of structural stainless steel elements in buildings and portions thereof shall be in accordance with the quality assurance inspection requirements of AISC 370.

1705.2.6	Metal building systems	Inspection requirements for metal building systems added.	Yes	No	
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1705.2.6 Metal building systems. Special inspections of metal building systems shall be performed in accordance with Sections 1705.2.1, 1705.2.3, 1705.2.4 and 1705.2.5 and Table 1705.2.6. The approved agency shall perform inspections of the erected metal building system to verify compliance with the approved construction documents.

TABLE 1705.2.6—SPECIAL INSPECTIONS OF METAL BUILDING SYSTEMS

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

18 Soils and Foundations

1803.5.1	Investigated conditions - Classification	Added the language "Rock shall be classified in accordance with ASTM D5878."	No	No	
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<p>1803.5.1 Classification. Soil materials shall be classified in accordance with ASTM D2487. Rock shall be classified in accordance with ASTM D5878.</p>					
1803.5.2	Questionable Soil and Rock	Added "moisture sensitivity" to list of questionable soil properties that permits a	Yes	No	
<p>1803.5.2 Questionable soil and rock. Where the classification, strength, moisture sensitivity or compressibility of the soil or rock is in doubt or where a load-bearing value superior to that specified in this code is claimed, the <i>building official</i> shall be permitted to require that a geotechnical investigation be conducted.</p>					
1803.5.3	Expansive Soils	Replaced references to ASTM D422 with ASTM D6913. No direct cost increase due to IBC changes, however const increases may result	Reference Standard Dependent	No	
<p>1803.5.3 Expansive soil. In areas likely to have expansive soil, the <i>building official</i> shall require soil tests to determine where such soils do exist.</p> <p>Soils meeting all four of the following provisions shall be considered to be expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted:</p> <ol style="list-style-type: none"> 1. Plasticity index (PI) of 15 or greater, determined in accordance with ASTM D4318. 2. More than 10 percent of the soil particles pass a No.200 sieve (75 µm), determined in accordance with ASTM D6913. 3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D6913. 4. Expansion index greater than 20, determined in accordance with ASTM D4829. 					
1803.5.4	Groundwater	Changed language from "subsurface soil investigation" to a "geotechnical investigation" and removed the exception for waterproofing eliminating the need to soil investigation.	Yes	No	
<p>1803.5.4 Groundwater. A geotechnical investigation shall be performed to determine if:</p> <ol style="list-style-type: none"> 1. Groundwater is above or within 5 feet (1524 mm) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation. 2. The groundwater depth will affect the design and construction of buildings and structures. 					
1803.5.6	Rock strata	Changed language from requiring "multiple borings" to "asses variations in rock strata depth". The new language appears to be a clarification of the original intent, as opposed to	No	No	
<p>1803.5.6 Rock strata. Where foundations are to be constructed on or in rock, the geotechnical investigation shall assess variations in rock strata depth, competency and load-bearing capacity.</p>					
1807.2.5	Guards	Added provisions for guards at retaining walls.	Yes	No	
<p>1807.2.5 Guards. Guards shall be provided at retaining walls in accordance with Sections 1807.2.5.1 through 1807.2.5.3.</p> <p>Exception: Guards are not required at retaining walls not accessible to the public.</p> <p>1807.2.5.1 Where required. At retaining walls located within 36 inches (914mm) of walking surfaces, a guard shall be required between the walking surface and the open side of the retaining wall where the walking surface is located more than 30 inches (762 mm) measured vertically to the surface or grade below at any point within 36 inches (914mm) horizontally to the edge of the open side. Guards shall comply with Section 1607.9.</p> <p>1807.2.5.2 Height. Required guards at retaining walls shall comply with the height requirements of Section 1015.3.</p> <p>1807.2.5.3 Opening limitations. Required guards shall comply with the opening limitations of Section 1015.4.</p>					
1807.3	Embedded posts and poles	Added option to follow ASABE EP 486.3 in place of IBC 1807.3.1 through 1807.3.3	No	No	

<p>1807.3 Embedded posts and poles. Designs to resist both axial and lateral <i>loads</i> employing posts or poles as columns embedded in earth or in concrete footings in earth shall be in accordance with Sections 1807.3.1 through 1807.3.3 or ASABE EP 486.3.</p>					
1808.8.6	Seismic Requirements	Seismic Design Cateogeory C is now required to follow the provisions of ACI 318 section 18.3	Yes	No	
<p>1808.8.6 Seismic requirements. See Section 1905 for additional requirements for foundations of <i>structures</i> assigned to <i>Seismic Design Category</i> C, D, E or F. For structures assigned to <i>Seismic Design Category</i> C, D, E or F, provisions of Section 18.13 of ACI 318 shall apply where not in conflict with the provisions of Sections 1808 through 1810. Exception: Detached one- and two-family <i>dwellings of light-frame construction</i> and <i>two stories</i> or less above <i>grade plane</i> are not required to comply with the provisions of Section 18.13 of ACI 318.</p>					
1809.14	Grade Beams	States grade beams shall comply with the provisions of ACI 318, with an exception for grade beams with limited differential settlement and is design to resist seismic load effects including overstrength. Grade beams perviously were designed following the provisions of ACI 318, therefore the only added language beyond clarification is an exception, therefore not cost increase.	No	No	
<p>1809.14 Grade beams. Grade beams shall comply with the provisions of ACI 318. Exception: Grade beams not subject to differential settlement exceeding one-fourth of the thresholds specified in ASCE 7 Table 12.13-3 and designed to resist the seismic <i>load effects</i> including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7 need not comply with ACI 318 Section 18.13.3.1.</p>					
1810.2.2	Stability	Replaced the language "Does not exceed 12 times the least horizontal dimension" with "analysis demonstrates that the element can support the required loads, including mislocations required by Section 1810.3.1.3, with neither harmful distortion nor instability in the structure." In some situations the new provisions may require higher capacity deep foundations, therefore there is a potential cost increase.	Potential	No	

<p>1810.2.2 Stability. <i>Deep foundation</i> elements shall be braced to provide lateral stability in all directions. Three or more elements connected by a rigid cap shall be considered to be braced, provided that the elements are located in radial directions from the centroid of the group not less than 60 degrees (1 rad) apart. A two-element group in a rigid cap shall be considered to be braced along the axis connecting the two elements. Methods used to brace <i>deep foundation</i> elements shall be subject to the approval of the <i>building official</i>.</p> <p><i>Deep foundation</i> elements supporting walls shall be placed alternately in lines spaced not less than 1 foot (305 mm) apart and located symmetrically under the center of gravity of the wall load carried, unless effective measures are taken to provide for eccentricity and lateral forces, or the foundation elements are adequately braced to provide for lateral stability.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Isolated cast-in-place <i>deep foundation</i> elements without lateral bracing shall be permitted where the least horizontal dimension is not less than 2 feet (610 mm), adequate lateral support in accordance with Section 1810.2.1 is provided for the entire height and analysis demonstrates that the element can support the required loads, including mislocations required by Section 1810.3.1.3, with neither harmful distortion nor instability in the structure. 2. A single row of <i>deep foundation</i> elements without lateral bracing is permitted for one- and two-family dwellings and lightweight construction not exceeding two stories above grade plane or 35 feet (10 668 mm) in building height, provided that the centers of the elements are located within the width of the supported wall. 					
1810.3.3.2	Allowable Lateral Load	Added clarifying language, including the requirement of group effects per section 1810.2.5. This is not a new requirement, but a reiteration in this section for clarity, section 1810.2.5 previously specified it was required for lateral loads. No cost increase.	No	No	
<p>1810.3.3.2 Allowable lateral load. Where required by the design, the lateral load capacity of a single <i>deep foundation</i> element or a group thereof shall be determined by an <i>approved</i> method of analysis or by lateral load tests to not less than twice the proposed design working load. The resulting allowable lateral load shall not be more than one-half of the load that produces a gross lateral movement of 1 inch (25 mm) at the lower of the top of the foundation element and the ground surface, unless it can be shown that the predicted lateral movement shall cause neither harmful distortion of, nor instability in, the structure, nor cause any element to be loaded beyond its capacity. Group effects shall be evaluated where required by Section 1810.2.5.</p>					
1810.3.8	Precast Concrete Panels	Site class designations are updated to be consistent with ASCE 7-16	No	No	
<p>1810.3.8 Precast concrete piles. Precast concrete piles shall be designed and detailed in accordance with ACI 318.</p> <p>▲ Exceptions:</p> <ol style="list-style-type: none"> 1. For precast prestressed piles in <i>Seismic Design Category C</i>, the minimum volumetric ratio of spirals or circular hoops required by Section 18.13.5.10.4 of ACI 318 shall not apply in cases where the design includes full consideration of load combinations specified in ASCE 7, Section 2.3.6 or Section 2.4.5 and the applicable overstrength factor, Ω_s. In such cases, minimum transverse reinforcement index shall be as specified in Section 13.4.5.6 of ACI 318. 2. For precast prestressed piles in <i>Seismic Design Categories D through F</i> and in <i>Site Class A, B, BC, C, CD, D or DE sites</i>, the minimum volumetric ratio of spirals or circular hoops required by Section 18.13.5.10.5(c) of ACI 318 shall not apply in cases where the design includes full consideration of load combinations specified in ASCE 7, Section 2.3.6 or Section 2.4.5 and the applicable overstrength factor, Ω_s. In such cases, minimum transverse reinforcement shall be as specified in Section 13.4.5.6 of ACI 318. 					
1810.3.9.4.2.1	Site Classes A through DE	Site class designations are updated to be consistent with ASCE 7-16	No	No	
<p>1810.3.9.4.2.1 Site Classes A through DE. For <i>Site Class A, B, BC, C, CD, D or DE sites</i>, transverse confinement reinforcement shall be provided in the element in accordance with Sections 18.7.5.2, 18.7.5.3 and 18.7.5.4 of ACI 318 within three times the least element dimension of the bottom of the pile cap. A transverse spiral reinforcement ratio of not less than one-half of that required in Table 18.10.6.4(g) of ACI 318 shall be permitted.</p>					

18120.3.12	Grade Beams	Added additional differential settlement requirements in order to use the exception for section 18.13.3.1. In some situations the new provisions may require higher capacity deep	Potential	No	
<p>1810.3.12 Grade beams. Grade beams shall comply with the provisions of ACI 318.</p> <p>Exception: Grade beams not subject to differential settlement exceeding one-fourth of the thresholds specified in ASCE 7 Table 12.13-3 and designed to resist the seismic <i>load effects</i> including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7 need not comply with ACI 318 Section 18.13.3.1.</p>					
1810.4.5	Vibratory Driving	Added guidance for installation of production elements. No direct cost increase.	No	No	
<p>1810.4.5 Vibratory driving. Vibratory drivers shall only be used to install <i>deep foundation</i> elements where the element load capacity is verified by load tests in accordance with Section 1810.3.3.1.2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> The pile installation is completed by driving with an impact hammer in accordance with Section 1810.3.3.1.1. The pile is to be used only for lateral resistance. <p>The installation of production elements shall be controlled according to power consumption, rate of penetration or <u>other approved</u> means that ensures element capacities equal or exceeding those of the test elements.</p>					
19 Soils and Foundations					
1901.2.1	Structural concrete with GFRP reinforcement	Section added	No	No	
<p>1901.2.1 Structural concrete with GFRP reinforcement. Cast-in-place structural concrete internally reinforced with glass fiber reinforced polymer (GFRP) reinforcement conforming to ASTM D7957 and designed in accordance with ACI CODE 440.11 shall be permitted where fire-resistance ratings are not required and only for structures assigned to <i>Seismic Design Category A</i>.</p>					
20 Aluminum					
No Significant Changes					
21 Masonry					
No Significant Changes					
22 Steel					
2203.1	Structural Stainless Steel - General	Added reference to AISC 370 for Structural Stainless Steel Design. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase	No	No	
<p>2203.1 General. The design, manufacture and erection of austenitic and duplex structural stainless steel shall be in accordance with AISC 370.</p>					
2204.1	Cold Formed Steel - General	Added reference to AISI S310 for the design of cold formed steel diaphragms. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	

<p>2204.1 General. The design of cold-formed carbon and low-alloy steel structural members not covered in Sections 2206 through 2209 shall be in accordance with AISI S100. The design of cold-formed steel diaphragms shall be in accordance with additional provisions of AISI S310 as applicable. Where required, the seismic design of cold-formed steel <i>structures</i> shall be in accordance with the additional provisions of Section 2204.2.</p>					
2205.1	Cold Formed Stainless Steel - General	Added reference to ASCE 8 for Cold Formed Stainless Steel Structural Design. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
<p>2205.1 General. The design of cold-formed stainless steel structural members shall be in accordance with ASCE 8.</p>					
2206.3	Cold Formed Steel Cutting and Notching	Added references for cutting and notching for structural members (AISI S240) and non-structural members (AISI S220). No significant cost increase.	No	No	
<p>2206.3 Cutting and notching. The cutting and notching of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for nonstructural members.</p>					
2210	Metal Building Systems	Added specific references for Metal Building Systems. While there is new guidance, the new code provisions are a clarification as the references point to typical structural steel design provision which Metal Buildings are already designed for. Therefore no cost increase	No	No	
<p>2210.1 General. The design, fabrication and erection of a <i>metal building system</i> shall be in accordance with the provisions of this section.</p> <p>2210.1.1 Design. The design of <i>metal building systems</i> shall be in accordance with Sections 2210.1.1.1 through 2210.1.1.4, as applicable.</p> <p>2210.1.1.1 Structural steel. The design, fabrication and erection of structural steel shall be in accordance with Section 2202.</p> <p>2210.1.1.2 Cold-formed steel. The design of cold-formed carbon and low-alloy steel structural members shall be in accordance with Section 2204.</p> <p>2210.1.1.3 Steel joists. The design of <i>steel joists</i> shall be in accordance with Section 2207.</p> <p>2210.1.1.4 Steel cable. The design, fabrication and erection of steel cables, including related connections, shall be in accordance with Section 2214.</p> <p>2210.2 Seismic design. Where required, the seismic design, fabrication and erection of the structural steel seismic force-resisting system shall be in accordance with Section 2202.2.1 or 2202.2.2, as applicable.</p>					
2211	Industrial Boltless Steel Shelving	Added reference to MHI ANSI/MH 28.3 and Chapter 15 of ASCE 7 for the design of Industrial Boltless Steel Shelving. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	

<p>2211.1 General. The design, testing and utilization of industrial boltless steel shelving shall be in accordance with MHI ANSI/MH 28.2. Where required by ASCE 7, the seismic design of industrial boltless steel shelving shall be in accordance with Chapter 15 of ASCE 7.</p>					
2212	Industrial Steel Work Platforms	Added reference to MHI ANSI/MH 28.3 and Chapter 15 of ASCE 7 for the design of Industrial Boltless Steel Shelving. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
<p>2212.1 General. The design, testing and utilization of industrial steel work platforms shall be in accordance with MHI ANSI/MH 28.3. Where required by ASCE 7, the seismic design of industrial steel work platforms shall be in accordance with Chapter 15 of ASCE 7.</p>					
<p>23 Wood</p>					
2305.1.2	Permanent load duration	Change correlates the NDS to the IBC	No	No	
<p>2305.1.2 Permanent load duration. Permanent loads are associated with permanent load duration in accordance with the ANSI/AWC NDS. For wood shear walls and wood diaphragms designed to resist lateral loads of permanent load duration only and that are not in combination with wind or seismic lateral loads, the design unit shear capacities shall be taken as the AWC SDPWS nominal unit shear capacities, multiplied by 0.2 for use with allowable stress design in Section 2306 and 0.3 for use with load and resistance factor design in Section 2307.</p>					
<p>24 Glass and Glazing</p>					
2404.1	Wind Loads	This section has a re-written format but contains all of the elements of the 2021 WA State Amendments shown	no	no	
<p>2404.1 Vertical glass. Glass sloped 15 degrees (0.26 rad) or less from vertical in windows, curtain and window walls, doors and other exterior applications shall be designed to resist the wind loads due to basic wind speed, V, in Section 1609 for components and cladding. Glass in glazed curtain walls, glazed storefronts and glazed partitions shall meet the seismic requirements of ASCE 7, Section 13.5.9. The load resistance of glass under uniform load shall be determined in accordance with ASTM E1300.</p> <p>The design of vertical glazing shall be based on Equation 24-1.</p> <p>Equation 24-1 $0.6F_{gw} \leq F_{gs}$</p> <p>where:</p> <p>F_{gw} = Wind load on the glass due to basic wind speed, V, computed in accordance with Section 1609.</p> <p>F_{gs} = Short duration load on the glass as determined in accordance with ASTM E1300.</p>					
2406.4.3	Glazing in Windows	Changes in #1/2 text adds the clause “or adjacent to walking surfaces” adds clarity and should be retained. Text of Exception #3 changed from “25 feet” in 2021 Code to “8 feet” in 2024 Code.	no	no	

2406.4.3 Glazing in windows. Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered to be a hazardous location:

1. The exposed area of an individual pane is greater than 9 square feet (0.84 m²).
2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor **or adjacent walking surface.**
3. The top edge of the glazing is greater than 36 inches (914 mm) above the floor **or adjacent walking surface.**
4. One or more walking surface(s) are within 36 inches (914 mm), measured horizontally and in a straight line, of the plane of the glazing.

Exceptions:

1. *Decorative glazing.*
2. Where a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal *load* of 50 pounds per linear foot (730 N/m) without contacting the glass and be not less than 1½ inches (38 mm) in cross-sectional height.
3. Outboard panes in insulating glass units **or** multiple glazing where the bottom exposed edge of the glass is **8 feet (2438 mm)** or more above any grade or walking surface adjacent to the glass exterior.

2407.1.1	Loads	Safety factor of 4 for glass handrails and guards has been omitted from Section 2407.1.1 and replaced with new language	no	no	
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2407.1.1 Loads. Glass *handrails* and *guards* and their support systems shall be designed to withstand the loads specified in Section 1607.9. **Calculated stresses for the loads specified in Section 1607.9 shall be less than or equal to 3,000 pounds per square inch (20.7 MPa) for heat-strengthened glass and less than or equal to 6,000 pounds per square inch (41.4 MPa) for fully tempered glass.**

25 Gypsum Panel Products and Plaster

No Significant Changes

26 Plastic

No Significant Changes

27 Electrical

Section 2703	Lightning Protection Systems	Recommendation: possible significant change accepted; seems logical to limit where lightning protection systems can be installed and how to interconnect those systems. This may increase costs; however, that would be negligible and never "requires" the systems to be installed it just outlines when you shouldn't and if you choose to what all should be connected to it. NFPA was the proponent and provided lots of justification; note, original proposal was to require on all buildings. What was approved was "when installed".	Yes	Yes	Coordinate with LNI Electrical Division
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SECTION 2703—LIGHTNING PROTECTION SYSTEMS

2703.1 General. Where provided, lightning protection systems shall comply with Sections 2703.2 through 2703.3.

2703.2 Installation. Lightning protection systems shall be installed in accordance with NFPA 780 or UL 96A. UL 96A shall not be utilized for *buildings* used for the production, handling or storage of ammunition, explosives, flammable liquids, flammable gases or other explosive ingredients including dust.

2703.2.1 Surge protection. Where lightning protection systems are installed, surge protective devices shall also be installed in accordance with NFPA 70 and either NFPA 780 or UL 96A, as applicable.

2703.3 Interconnection of systems. All lightning protection systems on a *building or structure* shall be interconnected in accordance with NFPA 780 or UL 96A, as applicable.

28 Mechanical Systems

No Significant Changes

29 Plumbing Systems

TABLE 2902.1	MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES	Many revisions added to Table 2902.1 providing numerous additional subdivisions of occupancy which require a detailed review for cost implications. These additional categorizations seem to offer advantages and clarity at common mixed occupancy conditions. Merger with WA version of table will be required with WA addition of the Occupancy Column.	No	Yes	
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TABLE 2902.1 [P] TABLE 2902.1—MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES* (See Sections 2902.1.1 and 2902.2.)									
NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
1	Assembly	Theaters and other buildings for the performing arts and motion picture s.	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Nightclubs, bars, taverns, dance halls and buildings for similar purposes ^d .	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
		Restaurants, banquet halls and food counters ^d .	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		Casino gaming areas	1 per 100 for the first 400 and 1 per 250 for the remainder exceeding 400	1 per 50 for the first 400 and 1 per 150 for the remainder exceeding 400	1 per 250 for the first 750 and 1 per 500 for the remainder exceeding 750		—	1 per 1,000	1 service sink
		Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and symposiums ^d .	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Passenger terminals and transportation facilities ^d .	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
		Places of worship and other religious ser vice s ^d .	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
		Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities ^f .	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities ^f .	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink		
2	Business	Buildings for the transaction of business, nonmedical profes sional services, other services involving merchandise, office buildings, banks, light indus trial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink ^e .
		Ambulatory care facilities and outpatient clinics	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 50		—	1 per 100	1 service sink per floor
3	Educational	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink

TABLE 2902.1 [P] TABLE 2902.1—MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES ^a (See Sections 2902.1.1 and 2902.2)—continued										
NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER	
			MALE	FEMALE	MALE	FEMALE				
4	Factory and industrial	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		—	1 per 400	1 service sink	
5	Institutional	Alcohol and drug centers ^b Congregate care facilities ^b Group homes ^b Halfway houses ^b Social rehabilitation facilities ^b Foster care facilities ^b	1 per 10 care recipients		1 per 10 care recipients		1 per 8 care recipients	—	—	
		Assisted living and residential board and care facilities with care recipients who receive custodial care	Sleeping units for care recipients ^c	1 per 2 sleeping units		1 per 2 sleeping units		1 per 8 sleeping units	—	—
			Dwelling units for care recipients	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit
			Employee facilities	1 per 60 care recipient units		1 per 60 care recipient units		—	1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipient units.		1 per 75 care recipient units		—	—	—
		Nursing homes ^c	Sleeping units for care recipients ^c	1 per 2 care recipient sleeping units		1 per 2 care recipient sleeping units		1 per 8 care recipient sleeping units	—	—
			Employee facilities	1 per 60 care recipient units		1 per 60 care recipient sleeping units		—	1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipient units		1 per 75 care recipient sleeping rooms		—	—	—

TABLE 2902.1 [P] TABLE 2902.1—MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES*
 (See Sections 2902.1.1 and 2902.2)—continued

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER	
			MALE	FEMALE	MALE	FEMALE				
5	Institutional— continued	Hospitals [‡]	Sleeping units for care recipients	1 per care recipient sleeping unit		1 per care recipient sleeping unit		1 per 100 care recipient sleeping units	—	
			Care recipient treatment areas	1 per 25 care recipient treatment rooms		1 per 50 care recipient treatment rooms		—	1 per 100	—
			Employee facilities	1 per 25 care recipient sleeping units or treatment room	1 per 25 care recipient sleeping units or treatment room	1 per 50 care recipient sleeping room or treatment room		—	1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipients sleeping units or treatment room	1 per 75 care recipient sleeping units or treatment room	1 per 50 care recipient sleeping room or treatment room		—	1 per 500	—
		Prisons [‡]	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink	
		Reformatories, detention centers and correctional centers [‡]	Cells	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
			Congregate Living Facilities	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
			Employees	1 per 25		1 per 35		—	1 per 100	—
		Adult day care and child day care	1 per 15		1 per 15		1	1 per 100	1 service sink	
		6	Mercantile	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000
7	Residential	Hotels, motels, boarding houses (transient)	1 per dwelling or sleeping unit		1 per dwelling or sleeping unit		1 per dwelling or sleeping unit	—	1 service sink	
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink	

TABLE 2902.1 [P] TABLE 2902.1—MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES*
(See Sections 2902.1.1 and 2902.2)—continued

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
7	Residential— continued	Apartment house	1 per dwelling unit or sleeping unit		1 per dwelling unit or sleeping unit		1 per dwelling unit or sleeping unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		Congregate living facilities with 16 or fewer care recipients receiving custodial care	1 per 10		1 per 10		1 per 8	—	1 kitchen sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
8	Storage	Structures for the storage of goods, warehouses, storehouse and freight depots. Low and Moderate Hazard.	1 per 100		1 per 100		—	1 per 1,000	1 service sink
<p>a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.</p> <p>b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.</p> <p>c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted, provided that each patient sleeping unit has direct access to the toilet room and provisions for privacy for the toilet room user are provided.</p> <p>d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.</p> <p>e. For business and mercantile classifications with an occupant load of 15 or fewer, a service sink shall not be required.</p> <p>f. The required number and type of plumbing fixtures for indoor and outdoor swimming pools shall be in accordance with Section 609 of the <i>International Swimming Pool and Spa Code</i>.</p>									

30 Elevators and Conveying Systems

NO Significant Changes

31 Special Construction

3103.1.1	Extended Period of Service Time	No amendment needed. Industry may want to make a proposal	No	No	Industry may provide a change proposal
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SPECIAL CONSTRUCTION					
<p>3103.1.1 Extended period of service time. Public-occupancy temporary structures shall be permitted to remain in service for 180 days or more without complying with requirements in this code for new building or structures where extensions for up to 1 year are granted by the Building Official in accordance with Section 108.1 and where the following conditions are satisfied:</p> <ol style="list-style-type: none"> 1. Additional inspections as determined by the building official shall be performed by a qualified person to verify that site conditions and the approved installation comply with the conditions of approval at the time of final inspection. 2. A qualified person shall perform follow-up inspections after initial occupancy at intervals not exceeding 180 days to verify the site conditions and the installation conform to the approved site conditions and installation requirements. Inspection records shall be kept and shall be made available for verification by the building official. 3. An examination shall be performed by a registered design professional to determine the adequacy of the temporary structure to resist the structural loads required in Section 3103.6. 4. Relocation of the public-occupancy temporary structure shall require a new permit application. 5. The use or occupancy approved at the time of final inspection shall remain unchanged. 6. A request for an extension is submitted to the building official. The request shall include records of the inspections and examination in items 1 and 3. 					
3103.5	Bleachers	No amendment needed. Industry may want to make a proposal	Yes	No	
<p>3103.5 Bleachers. Temporary bleachers, grandstands and folding and telescopic seating that are not building elements shall comply with ICC 300.</p>					
3103.6	Structural Requirements	No amendment needed. Industry may want to make a proposal	Yes	No	
<p>3103.6 Structural requirements. Temporary structures shall comply with the structural requirements of this code. Public-occupancy temporary structures shall be designed and erected to comply with the structural requirements of this code and Sections 3103.6.1 through 3103.6.4.</p> <p>Exception: Where approved, live loads less than those prescribed by Table 1607.1 shall be permitted provided that a registered design professional demonstrates that a rational approach has been used and that such reductions are warranted.</p> <p>Temporary non-building structures ancillary to public assemblies or special event structures whose structural failure or collapse would endanger assembled public shall be assigned a risk category corresponding to the risk category of the public assembly. For the purposes of establishing an occupant load for the assembled public endangered by structural failure or collapse, the applicable occupant load determination in Section 1004.5 or 1004.6 shall be applied over the assembly area within a radius equal to 1.5 times the height of the temporary non-building structure</p>					
3103.6.1	Structural Loads	No amendment needed. Industry may want to make a proposal	Yes	No	
<p>3103.6.1 Structural loads. Public-occupancy temporary structures shall be designed in accordance with Chapter 16, except as modified by Sections 3103.6.1.1 through 3103.6.1.6.</p>					
3103.6.1.1	Snow Loads	No amendment needed. Industry may want to make a proposal	Yes	No	

<p>3103.6.1.1 Snow loads. Snow loads on public-occupancy temporary structures shall be determined in accordance with Section 1608. The ground snow loads, p_g, in Section 1608 shall be modified according to Table 3103.6.1.1.</p> <p>Exception: Ground snow loads, p_g, for public-occupancy temporary structures that employ controlled-occupancy procedures per Section 3103.8 shall be permitted to be modified using a ground snow load reduction factor of 0.65 instead of the ground snow load reduction factors in Table 3103.6.1.1.</p> <p>Where the public-occupancy temporary structure is not subject to snow loads or not constructed and occupied during times when snow is to be expected, snow loads need not be considered, provided that where the period of time when the public-occupancy temporary structure is in service shifts to include times when snow is to be expected, one of the following conditions is met:</p> <ol style="list-style-type: none"> The design is reviewed and modified, as appropriate, to account for snow loads. Controlled occupancy procedures in accordance with Section 3103.8 are implemented. 																											
3103.6.1.1	Reduction Factors for Ground Snow Loads for public occupancy temporary structures	No amendment needed. Industry may want to make a proposal	No, reduction	No																							
<table border="1"> <thead> <tr> <th colspan="4">TABLE 3103.6.1.1—REDUCTION FACTORS FOR GROUND SNOW LOADS FOR PUBLIC-OCCUPANCY TEMPORARY STRUCTURES</th> </tr> <tr> <th rowspan="2">RISK CATEGORY</th> <th colspan="2">SERVICE LIFE</th> <th rowspan="2"></th> </tr> <tr> <th>≤ 10 yr</th> <th>>10 yr</th> </tr> </thead> <tbody> <tr> <td>II</td> <td>0.7</td> <td>1.0</td> <td></td> </tr> <tr> <td>III</td> <td>0.8</td> <td>1.0</td> <td></td> </tr> <tr> <td>IV</td> <td>1.0</td> <td>1.0</td> <td></td> </tr> </tbody> </table>						TABLE 3103.6.1.1—REDUCTION FACTORS FOR GROUND SNOW LOADS FOR PUBLIC-OCCUPANCY TEMPORARY STRUCTURES				RISK CATEGORY	SERVICE LIFE			≤ 10 yr	>10 yr	II	0.7	1.0		III	0.8	1.0		IV	1.0	1.0	
TABLE 3103.6.1.1—REDUCTION FACTORS FOR GROUND SNOW LOADS FOR PUBLIC-OCCUPANCY TEMPORARY STRUCTURES																											
RISK CATEGORY	SERVICE LIFE																										
	≤ 10 yr	>10 yr																									
II	0.7	1.0																									
III	0.8	1.0																									
IV	1.0	1.0																									
3103.6.1.3	Flood Loads	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG																						
<p>3103.6.1.3 Flood loads. Public-occupancy temporary structures need not be designed for flood loads specified in Section 1612. Controlled occupancy procedures in accordance with Section 3103.8 shall be implemented.</p>																											
3103.6.1.4	Seismic Loads	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG																						
<p>3103.6.1.4 Seismic loads. Seismic loads on public-occupancy temporary structures assigned to Seismic Design Categories C through F shall be permitted to be taken as 75 percent of those determined by Section 1613. Public-occupancy temporary structures assigned to Seismic Design Categories A and B are not required to be designed for seismic loads.</p>																											
3103.6.1.5	Ice Loads	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG																						
<p>3103.6.1.5 Ice loads. Ice loads on public-occupancy temporary structures shall be permitted to be determined with a maximum nominal thickness of 0.5 inch (13 mm), for all risk categories. Where the public-occupancy temporary structure is not subject to ice loads or not constructed and occupied during times when ice is to be expected, ice loads need not be considered, provided that where the period of time when the public-occupancy temporary structure is in service shifts to include times when ice is to be expected, one of the following conditions is met:</p> <ol style="list-style-type: none"> The design is reviewed and modified, as appropriate, to account for ice loads. Controlled occupancy procedures in accordance with Section 3103.8 are implemented. 																											
3103.6.1.6	Tsunami Loads	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG																						
<p>3103.6.1.6 Tsunami loads. Public-occupancy temporary structures in a tsunami design zone are not required to be designed for tsunami loads specified in Section 1615. Controlled occupancy procedures in accordance with Section 3103.8 shall be implemented.</p>																											
3103.6.2	Foundations	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG																						

<p>3103.6.2 Foundations. Public-occupancy temporary structures shall be permitted to be supported on the ground with temporary foundations where approved by the building official. Consideration shall be given for the impacts of differential settlement where foundations do not extend below the ground or where foundations are supported on compressible materials. The presumptive load-bearing value for public-occupancy temporary structures supported on a pavement, slab on grade or on other collapsible or controlled low-strength substrate soils such as beach sand or grass shall be assumed not to exceed 1,000 pounds per square foot (47.88 kPa) unless determined through testing and evaluation by a registered design professional. The presumptive load-bearing values listed in Table 1806.2 shall be permitted to be used for other supporting soil conditions.</p>					
3103.6.3	Installation and Maintenance Inspections	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG
<p>3103.6.3 Installation and maintenance inspections. A qualified person shall inspect public-occupancy temporary structures that are assembled using transportable and reusable materials. Components shall be inspected when purchased or acquired and at least once per year. The inspection shall evaluate individual components, and the fully assembled structure, to determine suitability for use based on the requirements in ESTA ANSI E1.21. Inspection records shall be kept and shall be made available for verification by the building official. Additionally, public-occupancy temporary structures shall be inspected at regular intervals when in service to ensure that the structure continues to perform as designed and initially erected.</p>					
3103.6.4	Durability	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG
<p>3103.6.4 Durability. Reusable components used in the erection and the installation of public-occupancy temporary structures shall be manufactured of durable materials necessary to withstand environmental conditions at the service location. Components damaged during transportation or installation or due to the effects of weathering shall be replaced or repaired.</p>					
3103.7	Servicability	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG
<p>3103.7 Serviceability. The effects of structural loads or conditions shall not adversely affect the serviceability or performance of the public-occupancy temporary structure.</p>					
3103.8	Controlled Occupancy Procedures	No amendment needed. Industry may want to make a proposal	Yes	No	Coordinate with Fire TAG
<p>3103.8 Controlled occupancy procedures. Where controlled occupancy procedures are required to be implemented for public-occupancy temporary structures in Section 3103.6.1, the procedures shall comply with this section and ANSI E1.7. An operations management plan in accordance with ANSI E1.21 shall be submitted to the building official for approval as a part of the permit documents. In addition, the operations management plan shall include an emergency action plan that documents the following information, where applicable:</p> <ol style="list-style-type: none"> Surfaces on which snow or ice accumulates shall be monitored before and during occupancy of the public-occupancy temporary structure. Any loads in excess of the design snow or ice load shall be removed prior to its occupancy, or the public-occupancy temporary structure shall be vacated in the event that either the design snow or ice load is exceeded during its occupancy. Wind speeds associated with the design wind loads shall be monitored before and during occupancy of the public-occupancy temporary structure. The public-occupancy temporary structure shall be vacated in the event that the design wind speed is expected to be exceeded during its occupancy. Criteria for initiating occupant evacuation procedures for flood and tsunami events. Occupant evacuation procedures shall be specified for each environmental hazard where the occupant management plan specifies the public-occupancy temporary structure is to be evacuated. Procedures for anchoring or removal of the public-occupancy temporary structure, or other additional measures or procedures to be implemented to mitigate hazards in snow, wind, flood, ice or tsunami events. 					
<p>32 Encroachments into the Public Right of Way</p> <p style="text-align: center;">No Significant Changes</p>					
<p>33 Safeguards During Construction</p> <p style="text-align: center;">No Significant Changes</p>					
<p>34 Reserved</p>					

35 Referenced Standards					
ACI	440.11—22	Added reference to the standard "ACI 440.11—22: Structural Concrete Buildings Reinforced Internally with Fiber Reinforced Polymer (FRP) Bars – Code Requirements", which is now referenced in IBC section 1901.2.1. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
440.11—22: Structural Concrete Buildings Reinforced Internally with Fiber Reinforced Polymer (FRP) Bars – Code Requirements 1901.2.1					
AISC	ANSI/AISC 370-21	Added reference to the standard "ANSI/AISC 370—21: Specification for Structural Stainless Steel Buildings", which is now referenced in IBC section 1705.2.2 and 2203.1. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
ANSI/AISC 370—21: Specification for Structural Stainless Steel Buildings 1705.2.2, 2203.1					
AISI	AISI S310	Added reference to the standard "AISI S310—20 w/S1—22: North American Standard for the Design of Profiled Steel Diaphragm Panels, with Supplement 1, 2022 Edition", which is now referenced in IBC section 2204.1 and 2208.1. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
AISI S310—20 w/S1—22: North American Standard for the Design of Profiled Steel Diaphragm Panels, with Supplement 1, 2022 Edition 2204.1, 2208.1					
ANSI	E1.21—2020	Added reference to the standard "E1.21—2020: Entertainment Technology—Temporary Structures Used for Technical Production of Outdoor Entertainment Events", which is now referenced in IBC section 3103.6.3 and 3103.8. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
E1.21—2020: Entertainment Technology—Temporary Structures Used for Technical Production of Outdoor Entertainment Events 3103.6.3, 3103.8					

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ANSI	ES1.7—2021	Added reference to the standard "ES1.7—2021: Event Safety Requirements - Weather Preparedness" , which is now referenced in IBC section 3103.8. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
ES1.7—2021: Event Safety Requirements - Weather Preparedness 3103.8					
ASHRAE	90.1-2022	Added reference to the standard "90.1—2022: Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings 1202.1", which is now referenced in IBC section 1202.1. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
90.1—2022: Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings 1202.1					
ASHRAE	170-2021	Added reference to the standard "170—2021: Ventilation of Health Care Facilities", which is now referenced in IBC section 1020.6. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
170—2021: Ventilation of Health Care Facilities 1020.6					
ASTM	A641/A641M-19	Added reference to the standard "A641/A641M-19: Specifications for Zinc-coated (Galvanized) Carbon Steel Wire", which is now referenced in IBC section 2304.10.6. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
A641/A641M—19: Specification for Zinc-coated (Galvanized) Carbon Steel Wire 2304.10.6					
ASTM	C1902—20	Added reference to the standard "C1902—20: Standard Specification for Cellular Glass Insulation Used in Building and Roof Applications", which is now referenced in IBC section 1508.2 and Table 1508.2. The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	

C1902—20: Standard Specification for Cellular Glass Insulation Used in Building and Roof Applications 1508.2, Table 1508.2					
ASTM	D2737-21: Standard Specification for Polyethylene (PE) Plastic Tubing	Added reference to the standard "D2737-21: Standard Specification for Polyethylene (PE) Plastic Tubing". The code reference includes guidance for systems not previously in the IBC, therefore no cost increase.	No	No	
D2737—21: Standard Specification for Polyethylene (PE) Plastic Tubing					
ASTM	D5878-19	Added reference to the standard "D5878—19: Standard Guides for Using Rock-Mass Classification Systems for Engineering Purposes", which is now referenced in IBC section 1803.5.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
D5878—19: Standard Guides for Using Rock-Mass Classification Systems for Engineering Purposes 1803.5.1					
ASTM	D6913/D6912M-17	Added reference to the standard "D6913/D6913M—17: Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis", which is now referenced in IBC section 1803.5.3. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
D6913/D6913M—17: Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis 1803.5.3					
ASTM	D7793-20	Added reference to the standard "D7793—20: Standard Specification for Insulated Vinyl Siding", which is now referenced in IBC section 1403.14. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
D7793—20: Standard Specification for Insulated Vinyl Siding 1403.14					
ASTM	D7957/D7957M	Added reference to the standard "D7957/D7957M—17: Standard Specification for Solid Round Glass Fiber Reinforced Polymer Bars for Concrete Reinforcement", which is now referenced in IBC section 1901.2.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	

D7957/D7957M—17: Standard Specification for Solid Round Glass Fiber Reinforced Polymer Bars for Concrete Reinforcement 1901.2.1					
ASTM	D8223-19	Added reference to the standard "D8223—19: Standard Practice for Evaluation of Fire-Retardant Treated Laminated Veneer Lumber 2303.2.6.3", which is now referenced in IBC section 2303.2.6.3. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
D8223—19: Standard Practice for Evaluation of Fire-Retardant Treated Laminated Veneer Lumber 2303.2.6.3					
ASTM	D8257/D8257M	Added reference to the standard "D8257/D8257M—20: Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing", which is now referenced in IBC section 2507.1.1, Table 1506.1.1(1). The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
D8257/D8257M—20: Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing 1507.1.1, Table 1507.1.1(1)					
ASTM	E2768-11(2018)	Added reference to the standard "E2768—11(2018): Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)", which is now referenced in IBC section 2303.2.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
E2768—11(2018): Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test) 2303.2.1					
ASTM	E2837-2013(2017)	Added reference to the standard "E2837—2013(2017): Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies", which is now referenced in IBC section 715.6. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
E2837—2013(2017): Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies 715.6					

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GA	GA-253-2011	Added reference to the standard "GA-253—2021: Application of Gypsum Sheathing", which is now referenced in IBC section Table 2508.1, 2508.2. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
GA-253—2021: Application of Gypsum Sheathing Table 2508.1, 2508.2					
MHI	ANSI MH28.2-2022	Added reference to the standard "ANSI MH28.2—2022: Design, Testing and Utilization of Industrial Boltless Steel Shelving", which is now referenced in IBC section 2211.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
ANSI MH28.2—2022: Design, Testing and Utilization of Industrial Boltless Steel Shelving 2211.1					
MHI	ANSI MH28.3-2022	Added reference to the standard "", which is now referenced in IBC section 2212.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
ANSI MH28.3—2022: Design, Testing and Utilization of Industrial Steel Work Platforms 2212.1					
MHI	ANSI MH32.1-2018	Added reference to the standard "ANSI MH32.1—2018: Stairs, Ladders, and Open-Edge Guards for Use with Material Handling Structures", which is now referenced in IBC section 2213.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
ANSI MH32.1—2018: Stairs, Ladders, and Open-Edge Guards for Use with Material Handling Structures 2213.1					
NFPA	770-21	Added reference to the standard "770—21: Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems", which is now referenced in IBC section 904.13. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
770—21: Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems 904.13					

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NFPA	780-20	Added reference to the standard "780—20: Standard for the Installation of Lightning Protection Systems", which is now referenced in IBC section 2703.2, 2703.2.1, 2703.3. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
780—20: Standard for the Installation of Lightning Protection Systems 2703.2, 2703.2.1, 2703.3					
RMI	ANSI MH16.1-2021	Added reference to the standard "ANSI MH16.1—2021: Design, Testing and Utilization of Industrial Storage Racks". The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
ANSI MH16.1—2021: Design, Testing and Utilization of Industrial Storage Racks					
SDI	ANSI/SDI SD-2022	Added reference to the standard "ANSI MH16.1—2021: Design, Testing and Utilization of Industrial Storage Racks", which is now referenced in IBC section 2208.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
ANSI/SDI SD—2022: Standard for Steel Deck 2208.1					
UL	96A-2016	Added reference to the standard "96A-2016: Standard for Installation Requirements for Lightning Protection Systems", which is now referenced in IBC section 2703.2, 2703.2.1, 2703.3. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
96A-2016: Standard for Installation Requirements for Lightning Protection Systems 2703.2, 2703.2.1, 2703.3					
UL	1034-2011	Added reference to the standard "1034-2011: Burglary-Resistant Electric Locking Mechanisms—with Revisions through June 2020", which is now referenced in IBC section 1010.2.10, 1010.2.11, 1010.2.12.1, 1010.2.13, 1010.2.14. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
1034-2011: Burglary-Resistant Electric Locking Mechanisms—with Revisions through June 2020 1010.2.10, 1010.2.11, 1010.2.12.1, 1010.2.13, 1010.2.14					

UL	8802-2020	Added reference to the standard "8802—2020: Outline of Investigation for Germicidal Systems", which is now referenced in IBC section 1211.1. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
8802—2020: Outline of Investigation for Germicidal Systems 1211.1					
WDMA	WDMA I.S. 11-2018	Added reference to the standard "WDMA I.S. 11—2018: Industry Standard for Analytical Method for Design Pressure (DP) Ratings of Fenestration Products", which is now referenced in IBC section 1709.5. The code reference includes guidance not previously in the IBC, therefore no cost increase.	No	No	
WDMA I.S. 11—2018: Industry Standard for Analytical Method for Design Pressure (DP) Ratings of Fenestration Products 1709.5					
Appendix E Supplementary Accessibility Requirements					
No Significant Changes					
Appendix P Sleeping Lofts					
2024 Code has new Appendix P WA Appendix P needs to be renumbered as Appendix Q					
Appendix Q Construction and Demolition Material Management Sleeping Lofts					
Appendix "Q"	Sleeping Lofts	Renumber Appendix from P to Q	No	No	