

2015 IBC Significant Changes



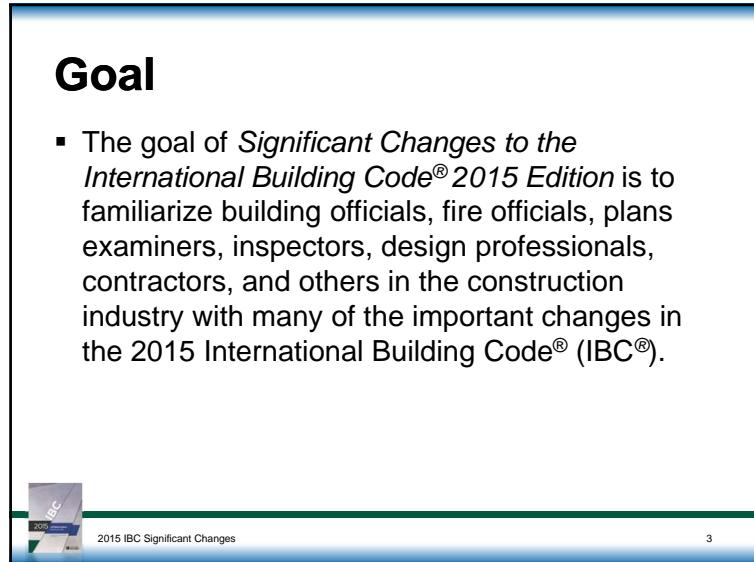
Description

- Overviews the changes from the 2012 to the 2015 IBC®.
 - Identifies changes in organization and code requirements and the applicability of these requirements to design, plan review and inspection.
- This course uses the *Significant Changes to the International Building Code: 2015 Edition*.



Goal

- The goal of *Significant Changes to the International Building Code® 2015 Edition* is to familiarize building officials, fire officials, plans examiners, inspectors, design professionals, contractors, and others in the construction industry with many of the important changes in the 2015 International Building Code® (IBC®).



Objectives

Upon completion of this seminar, participants will be better able to:

- Identify the most significant differences between the 2012 IBC and the 2015 IBC.
- Explain the differences between the current and previous edition.
- Identify key changes in organization and code requirements.
- Identify the applicability of design, plan review and inspection requirements.



2015 IBC Significant Changes

Introduce the course here

- Rules for the course, breaks, restroom location.
- Introduction of instructor and participants.
- Other



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Format of Significant Changes Series

Deleted Language	Change Type	New Code Text
	CHANGE TYPE: Addition	
1804.1 Excavation Near Foundations		<p>CHANGE SUMMARY: Basic requirements for providing safe and adequate underpinning at excavations have been added because the code was not specific on how to address excavations adjacent to structures.</p> <p>2015 CODE: 1804.1 Excavation Near Foundations. Excavation for any reason shall not remove, reduce, lateral support from any foundation or adjacent foundation without first underpinning or protecting the foundation against settlement or lateral translation, differential lateral or vertical movement, or both.</p> <p>1804.2 Underpinning. Where underpinning is chosen to provide the protection or support of adjacent structures, the underpinning system shall be designed and installed in accordance with provisions of this chapter and Chapter 33.</p> <p>1804.2.1 Underpinning Sequencing. Underpinning shall be installed in a sequential manner that protects the neighboring structure and the working construction site. The sequence of installation shall be identified in the approved construction documents.</p> <p>CHANGE SIGNIFICANCE: Specific requirements related to the excavation of foundations adjacent to structures had not previously been addressed in the IBC. Although underpinning is a Protection of Adjacent Properties measure, adjoining public and private property, including footings, foundations, party walls and so forth, to be adequately protected from damage during construction, remodeling and demolition work, there were no specific details provided. Because the IBC contained very little detail, the differences in required design protection were negligible.</p>



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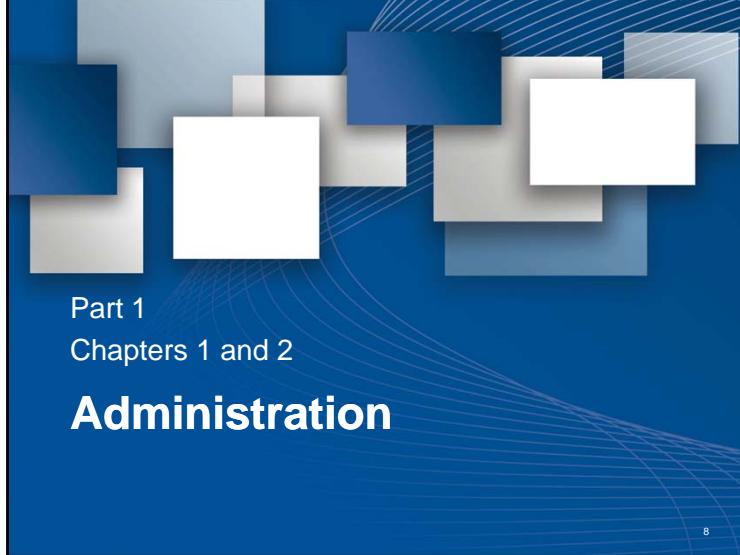
Topics

- Administration, Chapters 1 and 2
- Building Planning, Chapters 3 through 6
- Fire Protection, Chapters 7 through 9
- Means of Egress, Chapter 10
- Accessibility, Chapter 11
- Building Envelope, Structural Systems and Construction, Chapters 12 through 26
- Building Services, Special Devices, and Special Conditions, Chapters 27 through 34



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Part 1
Chapters 1 and 2

Administration

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101.2 Exempt Residential Accessory Structures

CHANGE TYPE: Modification

- Modifications to the *International Residential Code* (IRC) provisions have been reflected in the exception to IBC Section 101.2 such that the limiting height of an IRC structure accessory to a dwelling unit or townhouse has increased from two stories to three stories above grade plane.



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101.2 Exempt Residential Accessory Structures



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111.1 Change of Use of Occupancy



CHANGE TYPE: Modification

- A change in a building's use, or a portion of a building's use, with no change in its occupancy classification now requires that a new certification of occupancy be issued by the building official.



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202 Horizontal Exit

CHANGE TYPE: Modification

- **Horizontal Exit.** An exit component consisting of fire-resistance-rated construction and opening protectives intended to compartmentalize portions of a building thereby creating refuge areas that afford safety from the fire and smoke from the area of fire origin.

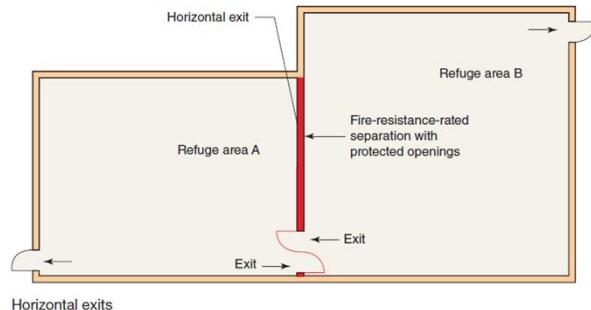


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202 Horizontal Exit



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202 Platform



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202 Platform

CHANGE TYPE: Clarification

- **202. Platform.** A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round stages; and similar purposes wherein, other than horizontal sliding curtains, there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.

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202 Private Garage

CHANGE TYPE: Addition

- **202. Private Garage.** A building or portion of a building in which motor vehicles used by the tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit.

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202 Treated Wood

CHANGE TYPE: Clarification

- **202. Treated Wood.** Wood and wood-based materials products that use vacuum-pressure impregnation processes are conditioned to enhance fire retardant or preservative properties.
- **Fire-Retardant-Treated Wood.** Pressure-treated lumber and plywood Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.
- **Preservative-Treated Wood.** Pressure-treated Wood products that, conditioned with chemicals by a pressure process or other means, exhibit reduced susceptibility to damage by fungi, insects or marine borers.

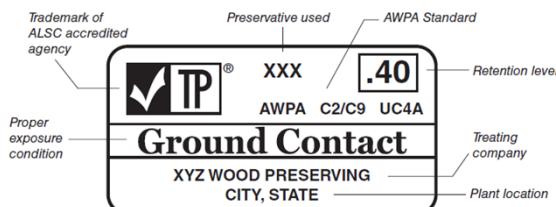


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202 Treated Wood

CHANGE TYPE: Clarification



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Code Changes

- Of the changes covered thus far, which will have the most impact on your job?



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Part 2 Chapters 3 though 6 Building Planning

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304.1 Food Processing Facilities and Commercial Kitchens

CHANGE TYPE: Modification

- **304.1 Business Group B.** Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following: ...
- (Added) Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities not more than 2500 square feet (232 m²) in area.



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306.2 Food Processing Facilities and Commercial Kitchens

CHANGE TYPE: Modification

- **306.2 Moderate-Hazard Factory Industrial, Group F-1.** Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following: ...
- Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities more than 2500 square feet (232 m²) in area



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304.1 Training and Skill Development Facilities

CHANGE TYPE: Clarification

- **304.1 Business Group B.** Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following: ...
- (Added) Training and skill development not in a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics and similar uses regardless of the ages served, and where not classified as a Group A occupancy).



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308.3 Groups I-1 Occupancy Classification

CHANGE TYPE: Modification

- The uses permitted in a Group I-1 custodial care facility have been expanded to include care recipients who may need a limited degree of verbal or physical assistance if responding to a fire or other emergency situation.



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308.4 Group I-2 Occupancy Classification

CHANGE TYPE: Modification

- Two basic conditions of Group I-2 medical care uses that have previously been regulated together as a single category have been created, dividing the classification into short-term care facilities, such as hospitals, and long-term care facilities, such as nursing homes.



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310.5 Group R-3 Lodging Houses

CHANGE TYPE: Modification

- Lodging houses are now specifically defined in Chapter 2 and are typically permitted to be constructed in accordance with the *International Residential Code* (IRC) if they contain no more than five guest rooms.



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308.4 Group I-2 Occupancy Classification

CHANGE TYPE: Modification

- Two basic conditions of Group I-2 medical care uses that have previously been regulated together as a single category have been created, dividing the classification into short-term care facilities, such as hospitals, and long-term care facilities, such as nursing homes.



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310.6 Group R-4 Lodging Houses



CHANGE TYPE: Modification

- The uses permitted in a Group R-4 custodial care facility have been expanded to include care recipients who may need a limited degree of verbal or physical assistance while responding to a fire or other emergency situation.

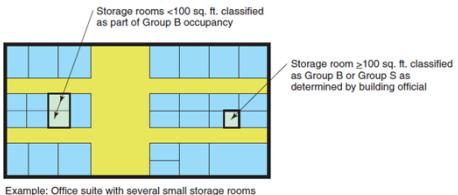


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311.11 Classification of Accessory Storage Spaces



CHANGE TYPE: Modification

- Storage rooms less than 100 square feet in floor area are not to be classified as Group S, but rather as the same occupancy as the portion of the building to which they are accessory.



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404.5 Exception, Atrium Smoke Control in Group I Occupancies

CHANGE TYPE: Modification

- Smoke control is now required in atriums in Group I-2 occupancies, as well as those in Group I-1 occupancies classified as Condition 2, that connect two stories.



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403.1 Exception Items 3 and 5 Applicability of High-Rise Provisions

CHANGE TYPE: Clarification

- Clarified code text now indicates that Group H-1 occupancies, as well as several specified types of Group H-2 and H-3 occupancies, are not required to comply with the high-rise provisions.



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404.9, 404.10 Egress Travel through an Atrium

CHANGE TYPE: Clarification

- The three distinct travel distance conditions that could potentially occur for areas open to an atrium are now each addressed individually in order to clarify their application.



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2015 IBC Significant Changes

406.3.1 Private Garage Floor-Area Limitation

CHANGE TYPE: Modification

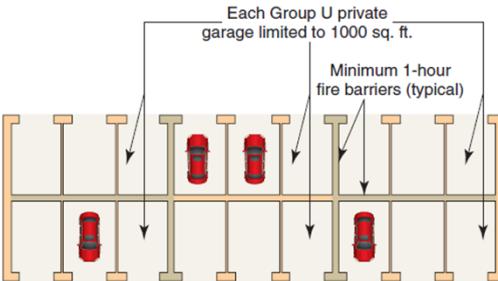
- A Group U private garage is now limited to a maximum floor area of 1000 square feet; however, multiple Group U private garages are permitted in the same building where they are compartmentalized by minimum 1-hour fire separations.



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406.3.1 Private Garage Floor-Area Limitation



Example: If non-sprinklered building of Type VB construction,
total allowable area limited to 5500 sq. ft.
plus any applicable frontage increase



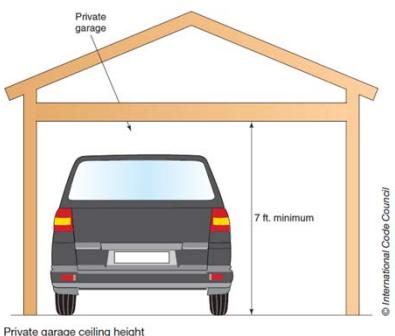
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406.3.2 Private Parking Garage Ceiling Height

CHANGE TYPE: Clarification

- The allowance for a 7-foot ceiling height previously permitted for public garages has now been extended to private garages and carports.



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407.2.5 Group I-2 Shared Living Spaces

CHANGE TYPE: Addition

- Shared living spaces, group meeting areas, and multipurpose therapeutic spaces are now permitted to be open to corridors in Group I-2, Condition 1 nursing homes provided five specific conditions are met.



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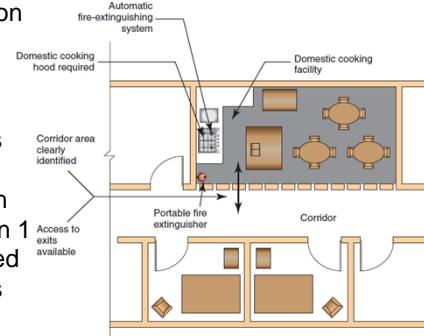
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407.2.6 Group I-2 Cooking Facilities

CHANGE TYPE: Addition

- A room or space containing a cooking facility with domestic cooking appliances is now permitted to be open to the corridor in a Group I-2, Condition 1 nursing home provided 13 specific conditions are met.



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410.3.5 Horizontal Sliding Doors at Stage Proscenium Opening

CHANGE TYPE: Addition

- An additional method of stage proscenium opening protection has now been provided that permits the use of horizontal sliding doors having a minimum fire protection rating of 1 hour.



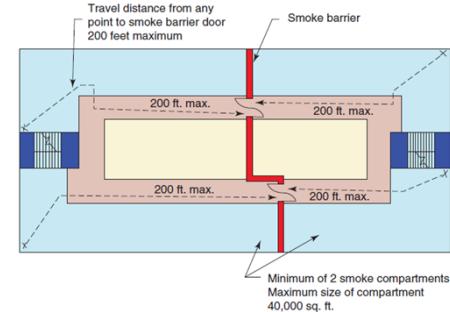
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407.5 Maximum Size of Group I-2 Smoke Compartments

CHANGE TYPE: Modification

- The maximum allowable smoke compartment size for Group I-2, Condition 2 hospitals and similar occupancies has been increased to 40,000 square feet.



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412.7 Travel Distance in Aircraft Manufacturing Facilities

CHANGE TYPE: Modification

TABLE 412.7 Aircraft Manufacturing Exit Access Travel Distance

Height (feet) ^b	Manufacturing Area (sq. ft.) ^a					
	≥150,000	≥200,000	≥250,000	≥500,000	≥750,000	≥1,000,000
≥25	400	450	500	500	500	500
≥50	400	500	600	700	700	700
≥75	400	500	700	850	1,000	1,000
≥100	400	500	750	1,000	1,250	1,500

For SI: 1 foot = 304.8 mm

a. Contiguous floor area of the aircraft manufacturing facility having the indicated height.

b. Minimum height from finished floor to bottom of ceiling or roof slab or deck.

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423.3 Storm Shelters Serving Critical Emergency Operations Facilities

CHANGE TYPE: Addition

- The construction of complying storm shelters is now required in critical emergency operations facilities where such facilities are located in geographical areas where the shelter design wind speed for tornadoes is at its highest.



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423.4 Storm Shelters Serving Group E Occupancies



CHANGE TYPE: Addition

- Storm shelters are now required in Group E occupancies located in those areas of the United States where the shelter design wind speed for tornadoes is at its highest.



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503 General Building Height and Area Limitations



CHANGE TYPE: Clarification

- The provisions regulating building height and area limitations have been extensively revised with no change in technical application in order to provide an increased degree of user-friendliness and technical consistency.



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Tables 504.3, 504.4 Building Height and Number of Stories

TABLE 503 504.3^a Allowable Building Heights-and-Areas in Feet Above Grade Plane

Occupancy Classification	See Footnotes	Type of Construction								
		Type I		Type II		Type III		Type IV		Type V
A,B,E,F,M,S,U	NS ^b	UL	160	65	55	65	55	65	50	40
H-1, H-2, H-3, H-5	NS ^{c,d}	UL	180	85	75	85	75	85	70	60
	≤	160	65	55	65	55	65	50	40	

Note: UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1

(Only a portion of Table 504.3 is shown above.)



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Tables 504.3, 504.4 Building Height and Number of Stories

TABLE 503 504.4^{a,b} Allowable Building Heights and Areas Number of Stories Above Grade Plane

Occupancy Classification	See Foot-Notes	Type of Construction								
		Type I		Type II		Type III		Type IV		Type V
A	B	A	B	A	B	HT	A	B	A	B
A-1	NS	UL	5	3	2	3	2	3	2	1
	S	UL	6	4	3	4	3	4	3	2
A-2	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-3	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2

Note: UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1

(Only a portion of Table 504.4 is shown above.)



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FOR EXAMPLE



2015 IBC Procedure for Determining Allowable Height and Compliance Review:

- **GIVEN:** A fully sprinklered Group A-2 restaurant in a building of Type VB construction. Building has two stories above grade plane and is 32 feet in height.
- **DETERMINE:** If in compliance with maximum allowable building height in feet and stories above grade plane.



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2015 IBC Procedure for Determining Allowable Height and Compliance Review:

- **Step 1:** Review and apply applicable provisions of Section 503 for general building height determination.
- **Step 2:** Review and apply applicable provisions of Section 504 regarding the determination of allowable building height in feet and allowable number of stories above grade plane.



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2015 IBC Procedure for Determining Allowable Height and Compliance Review:

- **Step 3:** Determine allowable building height in feet as established in Table 504.3. Verify actual building height in feet does not exceed allowable height.
 - Allowable height in feet from Table 504.3: 60 feet
 - Actual height: 32 feet OK



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FOR EXAMPLE

2015 IBC Procedure for Determining Allowable Height and Compliance Review:

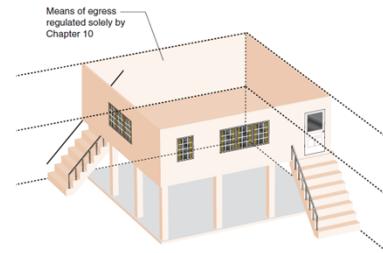
- Step 4:** Determine allowable building height in stories above grade plane as established in Table 504.4. Verify actual number of stories above grade plane does not exceed allowable height.
 - Allowable height in stories above grade plane from Table 504.4: 2 stories
 - Actual height in stories above grade plane: 2 stories OK

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505.2.3, Exception 2, Mezzanine Openness

CHANGE TYPE: Modification

- Direct access to at least one exit at the mezzanine level is no longer required for those enclosed mezzanines regulated by Exception 2 of Section 505.2.3.



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Table 506.2 Building Area

CHANGE TYPE: Clarification

TABLE 503 506.2^{a,b} Allowable Building Heights and Areas Factor (A_1 = NS, S1, S13R or SM, as applicable) in Square Feet

Occupancy Classification	See Footnotes	Type of Construction								
		Type I		Type II		Type III		Type IV		Type V
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000

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507.1 Basements in Unlimited Area Buildings



CHANGE TYPE: Clarification

- The allowance of a single-story basement in unlimited area buildings has now been clarified.

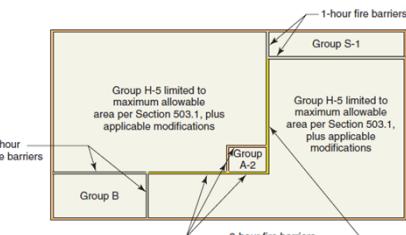
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507.9 Group H-5 in Unlimited Area Buildings

CHANGE TYPE: Addition

- Group H-5 buildings are now permitted to be unlimited in area under the special provisions of Section 507.



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Table 509 Fire Protection from Incidental Uses

CHANGE TYPE: Modification

- A more detailed analysis of various support spaces within a healthcare or ambulatory care facility is now possible due to modifications to Table 509 regulating incidental uses.

TABLE 509 Incidental Uses

Room or Area	Separation and/or Protection
Furnace room where any piece of equipment is over 400,000 Btu per hour input.	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen outlet fuel gas rooms, not classified as Group H	1 hour in Groups B, E, M, S and U occupancies

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510.2 Horizontal Building Separation

CHANGE TYPE: Modification

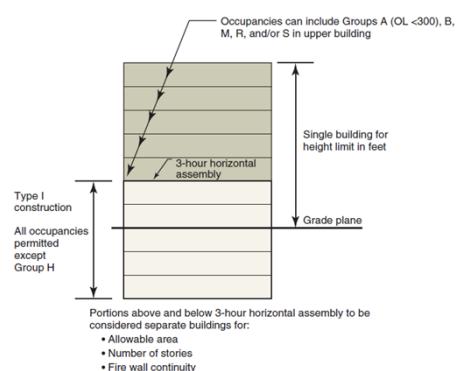
- In the special provisions of Section 510.2 addressing pedestal buildings, there is no longer a limit of one story above grade plane for that portion of the structure that occurs below the 3-hour horizontal separation.



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510.2 Horizontal Building Separation



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Table 601, Footnote d One-Hour Substitution									
Nonbearing walls and partitions									
Interior ^d	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1½ ^b	1 ^{b,c}	1 ^{b,c}	0 ^e	1 ^{b,c}	0	HT	1 ^{b,c}	0
For SI: 1 foot = 304.8 mm.									
a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.									
b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.									
c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.									
d. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire-resistance of exterior walls shall not be permitted.									
e. d. Not less than the fire-resistance rating required by other sections of this code.									
f. g. Not less than the fire-resistance rating based on fire separation distance (See Table 602).									
g. h. Not less than the fire-resistance rating as referenced in Section 704.10.									
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FOR EXAMPLE	Example
	<p>▪ GIVEN: A fully sprinklered Type B office building of combustible unprotected construction (no frontage increase available).</p> <p>▪ DETERMINE: The maximum allowable building height and area where the sprinkler protection is used to:</p> <ol style="list-style-type: none">Increase the allowable height and area per Chapter 5; orClassify the building as Type VA construction per 2012 IBC Table 601, note d.  2015 IBC Significant Changes

FOR EXAMPLE	Example
	<p>Solutions:</p> <p>(a) Based on Group M, Type VB, fully-sprinklered conditions:</p> <ul style="list-style-type: none">Per Table 504.3, allowable height in feet: 60 feetPer Table 504.4, allowable height in stories above grade plane: 3 storiesPer Table 506.2, allowable area for multi-story conditions: 27,000 square feet <p>(b) Based on Group M, Type VA, fully-sprinklered conditions:</p> <ul style="list-style-type: none">Per Table 504.3, allowable height in feet: 50 feetPer Table 504.4, allowable height in stories above grade plane: 3 storiesPer Table 506.2, allowable area for multi-story conditions: 18,000 square feet <p>Therefore, it was more advantageous to ignore use of note d for allowable height in feet and allowable area purposes.</p>  2015 IBC Significant Changes

FOR EXAMPLE	602.4 Type IV Member Size Equivalencies
	<p>CHANGE TYPE: Addition</p> <p>▪ Equivalent size dimensions for structural composite lumber (SCL) in relationship to solid-sawn Type IV heavy-timber members have been introduced into Table 602.4.</p>  2015 IBC Significant Changes

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602.4.2 Cross-Laminated Timber in Exterior Walls

CHANGE TYPE: Addition

- Cross-laminated timber is now permitted within the exterior walls of Type IV buildings where protected by one of three specified materials.



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603.1, Item 26 Wall Construction of Freezers and Coolers

CHANGE TYPE: Addition

- Walls of freezers and coolers located in buildings of Type I and II construction may now be constructed of wood materials provided three conditions are met.



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Code Changes

- Of the changes covered thus far, which will have the most impact on your job?



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Chapters 7 through 9

Fire Protection

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704.4 Protection of Secondary Members

CHANGE TYPE: Clarification

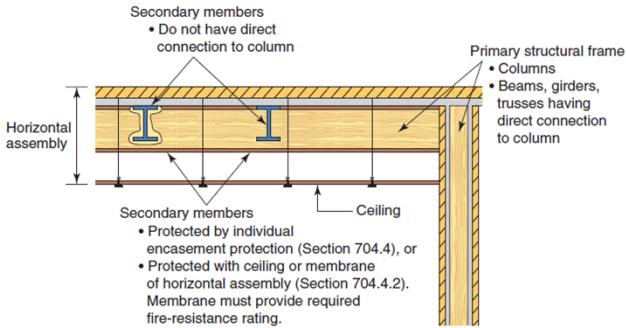
- For structural fire protection purposes, the secondary member protection requirements have been reformatteed and clarifies that the secondary members in a horizontal assembly can be protected by a ceiling membrane.



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704.4 Protection of Secondary Members



Protection of secondary members in horizontal assemblies



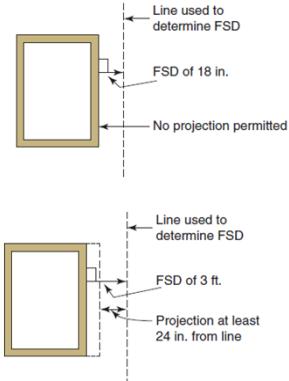
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705.2 Projections at Exterior Walls

CHANGE TYPE: Modification

- The minimum required separation between the leading edge of a projection and the line used to determine the fire separation distance has been modified in a manner that provides for a significant increase in the separation required.



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705.2 Projections at Exterior Walls

CHANGE TYPE: Modification

TABLE 705.2 Minimum Distance of Projection

Fire Separation Distance (FSD)	Minimum Distance from Line Used to Determine FSD
0 feet to less than 2 feet	Projections not permitted
Greater than 2 feet to less than 5 feet	24 inches
3 feet	
5 feet or greater than 3 feet to less than 30 feet	40 inches 24 inches plus 8 inches for every foot of FSD beyond 3 feet or fraction thereof
30 feet or greater	20 feet

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm.



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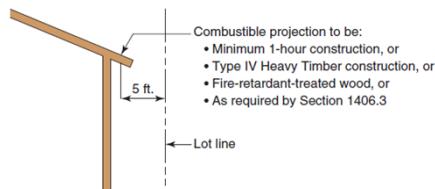
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705.2.3 Combustible Projections

CHANGE TYPE: Modification

- The provisions regulating combustible projections adjacent to an interior lot line or other line used to determine the fire separation distance have been modified to provide a simple and consistent approach that is less restrictive than previously determined.

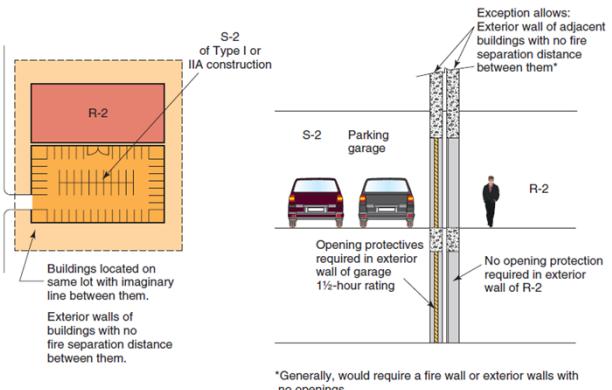


2015 IBC Significant Changes

69

705.3 Buildings on the Same Lot

705.3 Buildings on the Same Lot



2015 IBC Significant Changes

70

705.6 Structural Element Bracing of Exterior Walls

CHANGE TYPE: Modification

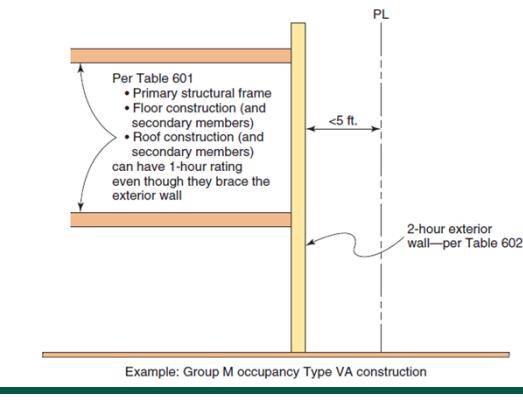
- Interior structural elements, such as floor or roof elements, that brace exterior walls are no longer required to be regulated for fire resistance due to the exterior wall's rating regardless of the building's proximity to a lot line.



2015 IBC Significant Changes

71

705.6 Structural Element Bracing of Exterior Walls



2015 IBC Significant Changes

72

2015 IBC Significant Changes

705.8.5 Vertical Separation of Openings

CHANGE TYPE: Clarification

- Where a fire-resistance-rated wall is provided to address the concern of a fire spreading out of the building and then exposing an upper-level opening, the exterior wall must be rated from both sides, regardless of the fire separation distance.



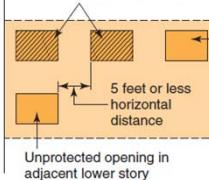
2015 IBC Significant Changes

73

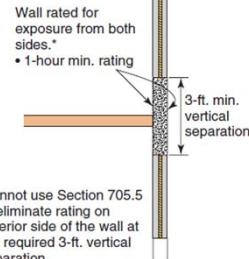
705.8.5 Vertical Separation of Openings

Vertical separation required for openings in upper story by:

- 3-ft. min. vertical separation, or
- 30-in. horizontal flame barrier



(a) Exterior elevation



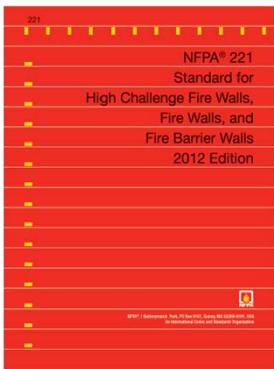
* Cannot use Section 705.5 to eliminate rating on exterior side of the wall at the required 3-ft. vertical separation

(b) Exterior wall section

706.2 Structural Stability of Fire Walls

CHANGE TYPE: Modification

- The reference to NFPA 221 for fire wall design and construction has been expanded to permit the use of the "tied" and "cantilevered" options addressed in the standard.



2015 IBC Significant Changes

75

709.4 Continuity of Smoke Barriers

CHANGE TYPE: Clarification

- The horizontal continuity of smoke barriers has been clarified for smoke barriers used to create smoke compartments, as well as for smoke barrier walls intended to create enclosures for elevator lobbies or areas of refuge.

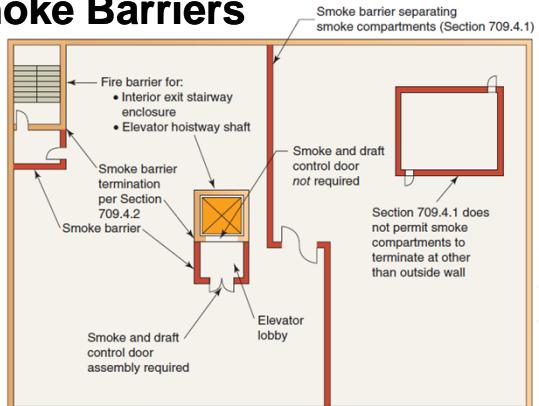


2015 IBC Significant Changes

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2015 IBC Significant Changes

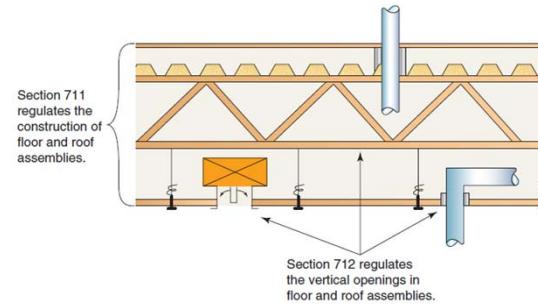
709.4 Continuity of Smoke Barriers



2015 IBC Significant Changes

77

711, 712 Horizontal Assemblies and Vertical Openings



2015 IBC Significant Changes

79

711, 712 Horizontal Assemblies and Vertical Openings

CHANGE TYPE: Modification

- The reorganization of Sections 711 and 712 has been continued such that Section 711 now contains only the construction requirements for floor and roof assemblies, and Section 712 only contains the requirements related to the protection of vertical openings.

2015 IBC Significant Changes

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714.4.2 Membrane Penetrations

CHANGE TYPE: Modification

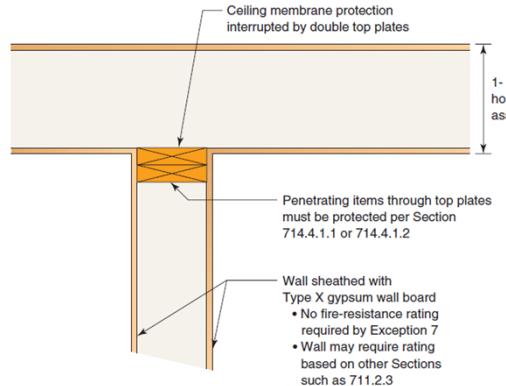
- Where the double top plates of a wall interrupt the ceiling membrane of a horizontal assembly, the wall must now be sheathed only with Type X gypsum wallboard. The wall will not require a fire-resistance rating unless needed due to some other code requirement.

2015 IBC Significant Changes

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2015 IBC Significant Changes

714.4.2 Membrane Penetrations



2015 IBC Significant Changes

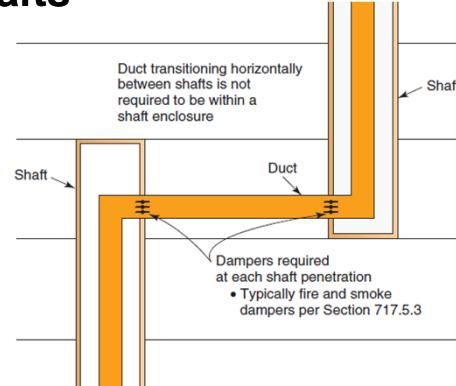
81

717.1.1 Ducts Transitioning between Shafts

CHANGE TYPE:

Clarification

- Ducts are now expressly allowed to exit a shaft, transition horizontally, and then enter another shaft without continuous shaft construction.



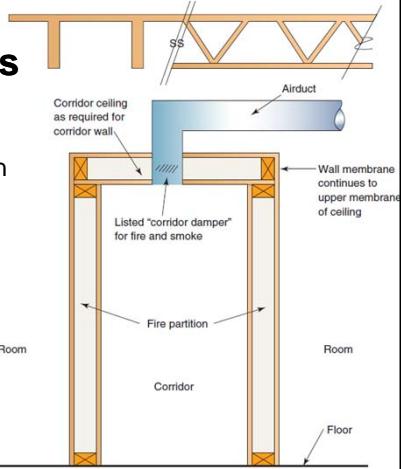
2015 IBC Significant Changes

82

717.3, 717.5 Corridor Dampers

CHANGE TYPE: Clarification

- Where a duct penetration occurs in the ceiling of a fire-resistance-rated corridor where the lid of the corridor is constructed using a corridor wall placed horizontally, a corridor damper is now specifically mandated.



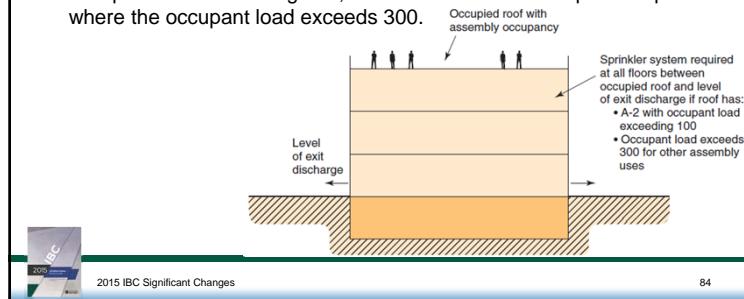
2015 IBC Significant Changes

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903.2.1.6 Sprinkler Systems—Assembly Occupancies

CHANGE TYPE: Addition

- An automatic sprinkler system is now required to be installed in a building when the roof is used for a Group A-2 assembly occupancy with an occupant load exceeding 100, as well as for other Group A occupancies where the occupant load exceeds 300.



2015 IBC Significant Changes

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2015 IBC Significant Changes

903.2.1.7 Multiple Fire Areas

CHANGE TYPE: Addition

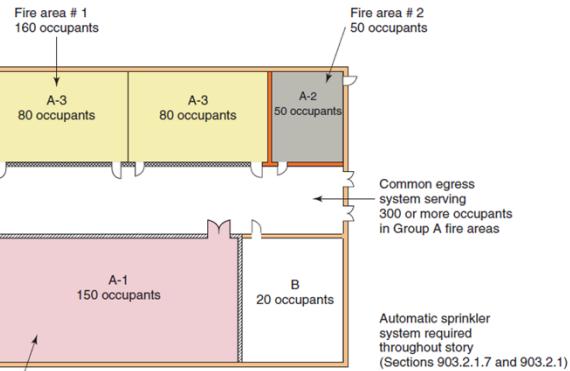
- Where small Group A fire areas share a common means of egress, the occupant load of the spaces must now be added together to determine if a sprinkler system is required.



2015 IBC Significant Changes

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903.2.1.7 Multiple Fire Areas



2015 IBC Significant Changes

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903.2.8 Sprinkler Systems—Group R Occupancies

CHANGE TYPE: Modification

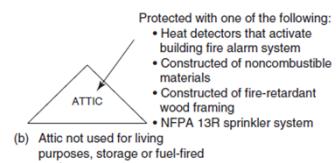
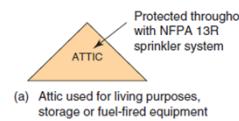
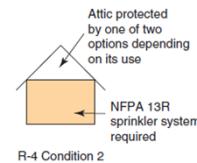
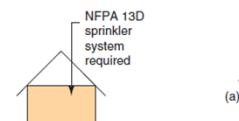
- Sprinkler requirements for Group R-4 occupancies are now dependent on the capabilities of the occupants. In buildings where occupants require limited assistance when responding to an emergency condition, additional sprinkler protection is required for attic spaces.



2015 IBC Significant Changes

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903.2.8 Sprinkler Systems—Group R Occupancies



2015 IBC Significant Changes

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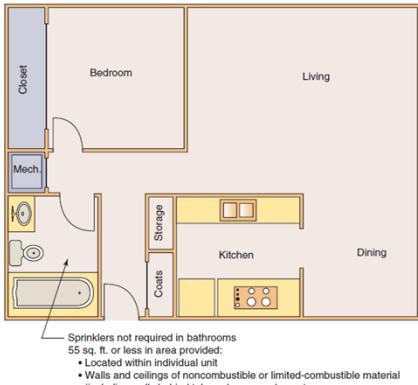
2015 IBC Significant Changes

903.3.1.1.2 Exempt Locations for NFPA 13 Sprinklers

CHANGE TYPE:

Modification

- An exemption for sprinkler systems in small residential bathrooms has been introduced into the IBC because the provision was removed from the current edition of the referenced NFPA 13 standard.



2015 IBC Significant Changes

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903.3.8 Limited Area Sprinkler Systems

CHANGE TYPE:

Modification

- Additional restrictions have been placed on limited area sprinkler systems, including a reduction in the system size to a maximum of six sprinklers within a single fire area.

2015 IBC Significant Changes

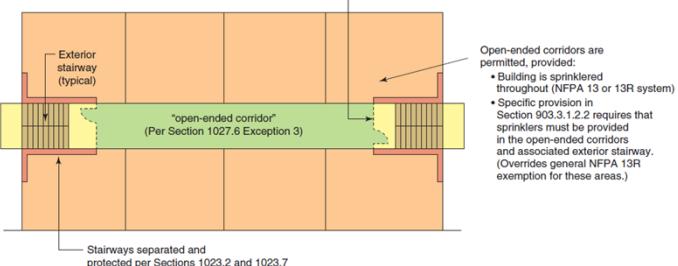
91

903.3.1.2.2 Open-Ended Corridors

CHANGE TYPE:

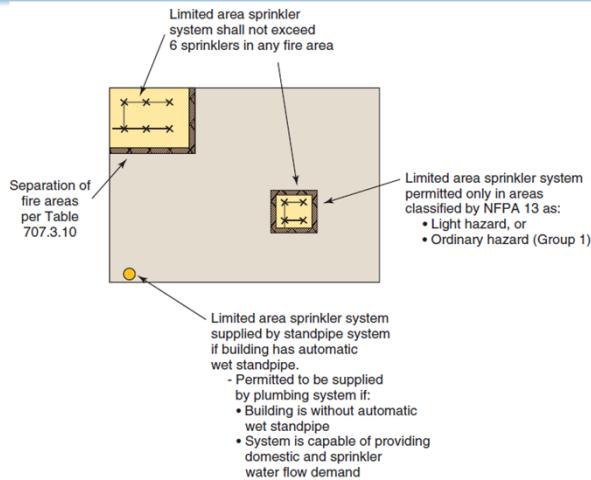
Clarification

Wall and fire door eliminated by Section 1027.6 Exception 3



2015 IBC Significant Changes

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2015 IBC Significant Changes

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2015 IBC Significant Changes

904.13 Domestic Cooking Systems in Group I-2 Condition 1

CHANGE TYPE: Addition

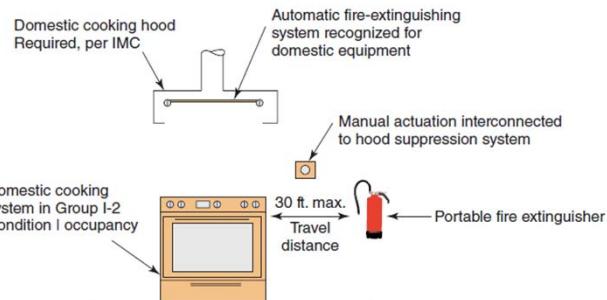
- Requirements for domestic appliances installed within commercial facilities but used only for domestic cooking have been clarified, including provisions for an appropriate fire-extinguishing system for domestic cooking equipment in nursing homes, assisted living facilities and similar buildings.



2015 IBC Significant Changes

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904.13 Domestic Cooking Systems in Group I-2 Condition 1



2015 IBC Significant Changes

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907.2.3 Fire Alarms—Group E Occupancies

CHANGE TYPE: Modification

- The threshold for alarm systems in Group E occupancies has been increased such that a manual fire alarm is required where the occupant load exceeds 50, and an emergency voice/alarm communication (EVAC) system must only be provided where the occupant load exceeds 100.



2015 IBC Significant Changes

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907.2.9.3 Alarm Systems—Group R-2 College and University Buildings

CHANGE TYPE: Modification

- The scope of the fire alarm provisions for Group R-2 college and university buildings has been revised to apply to facilities "operated by" the college or university whether owned by the school or not.



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2015 IBC Significant Changes

907.2.11.3, 907.2.11.4 Smoke Alarms Near Cooking Appliances and Bathrooms

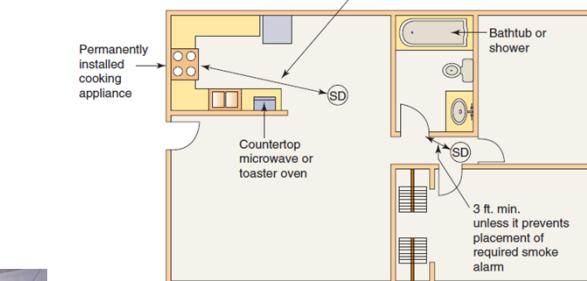
CHANGE TYPE: Modification

- Requirements from the NFPA 72 standard addressing the installation of smoke alarms near cooking appliances and bathrooms have been introduced to the IBC in order to provide direct guidance on the placement of smoke alarms.

2015 IBC Significant Changes

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- Unless it prevents placement of required smoke alarm, locate as shown:
- Ionization alarm—20 ft. min.
- Ionization alarm with silencing switch—10 ft. min.
- Photoelectric alarm—6 ft. min.



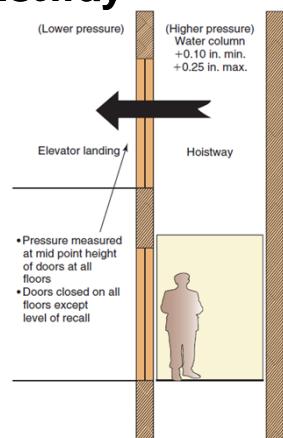
2015 IBC Significant Changes

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909.21.1 Elevator Hoistway Pressurization

CHANGE TYPE: Modification

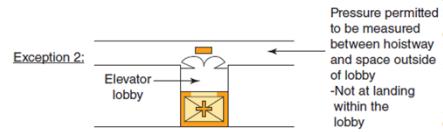
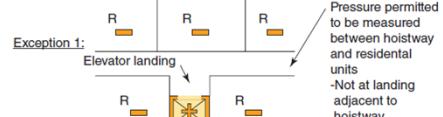
- Viable alternatives to the general elevator hoistway pressurization requirements are now available where pressurization is provided in lieu of an enclosed elevator lobby or an additional door.



2015 IBC Significant Changes

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909.21.1 Elevator Hoistway Pressurization, Exception 1,2



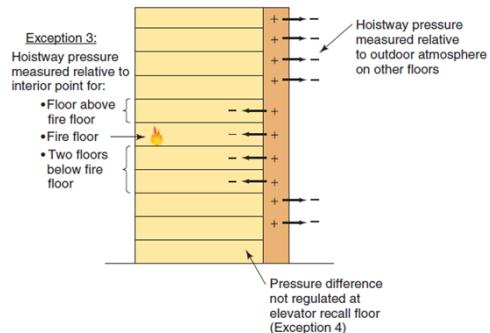
Exceptions 1 and 2 to pressurization requirement

2015 IBC Significant Changes

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2015 IBC Significant Changes

909.21.1 Elevator Hoistway Pressurization, Exception 3, 4



2015 IBC Significant Changes

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910 Smoke and Heat Removal

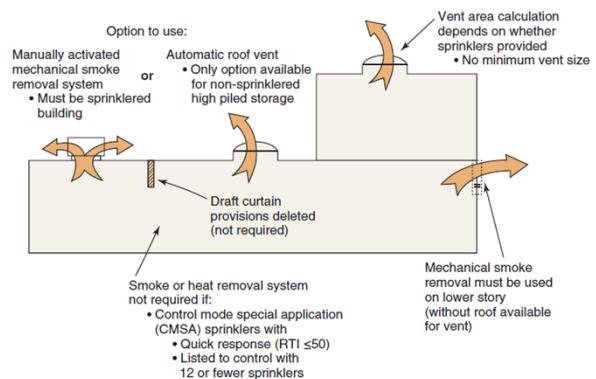
CHANGE TYPE: Modification

- The format and technical requirements for smoke and heat removal systems have been revised, including a new allowance permitting a mechanical smoke removal system as an alternative to smoke and heat vents.

2015 IBC Significant Changes

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910 Smoke and Heat Removal



2015 IBC Significant Changes

103

915 Carbon Monoxide Detection

CHANGE TYPE: Modification

- The carbon monoxide (CO) alarm provisions have been relocated, reformatted and revised; the scope has been modified to exclude Group I-3 occupancies while adding Group E occupancies.



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2015 IBC Significant Changes

 **Code Changes**

- Of the changes covered thus far, which will have the most impact on your job?

 2015 IBC Significant Changes 105

Chapter 10

Means of Egress

106

Means of Egress

CHANGE TYPE:
Modification

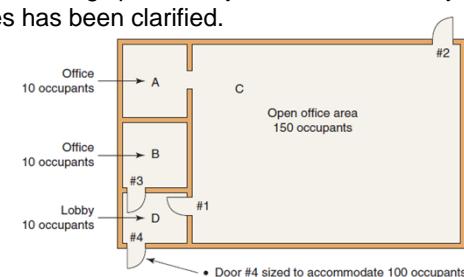
- Provisions addressing the minimum required number of means of egress and their arrangement for rooms and space as well as stories have been reformatted and relocated.
- **Section 1015-1006 Numbers of Exits and Exit Access Doorways**
- **Section 1021 Number of Exits and Exit Configuration**
- **Section 1007 Exit and Exit Access Doorway Configuration**
- **Section 1007-1009 Accessible Means of Egress**

 2015 IBC Significant Changes 107

1004.1.1 Cumulative Occupant Loads

CHANGE TYPE: Modification

- The determination of the cumulative design occupant load for intervening spaces, adjacent levels and adjacent stories has been clarified.



Office 10 occupants → A

Office 10 occupants → B

Lobby 10 occupants → D

Open office area 150 occupants → C

- Door #4 sized to accommodate 100 occupants
- Lobby D only requires a single exit

 2015 IBC Significant Changes 108

2015 IBC Significant Changes

Table 1004.1.2 Occupant Load Factors

CHANGE TYPE: Modification

- The mercantile occupant load factor has been revised such that a single factor is now applicable regardless of the story on which the mercantile use is located.

TABLE 1004.1.2 Maximum Floor Area Allowances per Occupant

Function of Space	Occupant Load Factor ^a
Mercantile	60 gross
Areas on other floors	60 gross
Basement and grade floor areas	30 gross
Storage, stock, shipping areas	300 gross

For SI: 1 square foot = 0.0929 m².

a. Floor area in square feet per occupant.

(Remaining portions of table not shown are unchanged.)

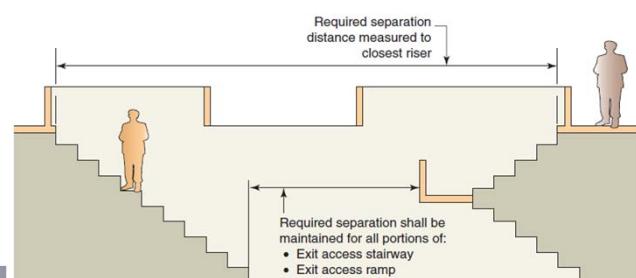


2015 IBC Significant Changes

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1007.1 Exit and Exit Access Doorway Configuration

CHANGE TYPE: Modification



2015 IBC Significant Changes

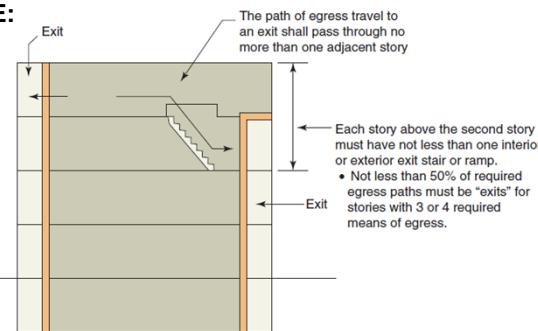
111

1006, 1007 Numbers of Exits and Exit Access Doorways

CHANGE TYPE: Modification

Modification

- The means of egress requirements for rooms and spaces, along with those for stories, have been consolidated in Chapter 10.



2015 IBC Significant Changes

110

1009.8 Two-Way Communication Systems

CHANGE TYPE: Clarification

- It has been clarified that a two-way communication system may serve multiple elevators and that the systems are not required at service elevators, freight elevators or private residence elevators.



2015 IBC Significant Changes

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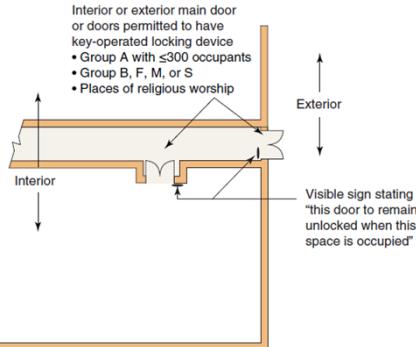
2015 IBC Significant Changes

1010.1.9 Door Operations—Locking Systems

CHANGE TYPE:

Modification

- Numerous revisions throughout the locking provisions now help clarify requirements and their application through the use of consistent terminology.



2015 IBC Significant Changes

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1014.8 Handrail Projections

CHANGE TYPE:

Clarification

- Guidance is now provided regarding potential obstructions in the required egress width of a stairway where a pair of intermediate handrails is installed.



2015 IBC Significant Changes

115

1011.15, 1011.16 Ladders

CHANGE TYPE:

CHANGE SUMMARY:

Locations where ladders can be used for access have now been identified and permanent ladders must follow the construction requirements from the *International Mechanical Code* (IMC).



2015 IBC Significant Changes

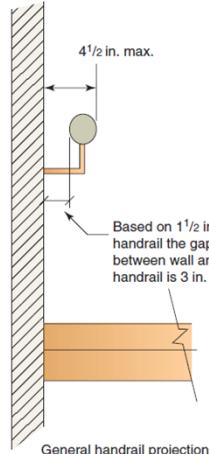
114

2015 IBC Significant Changes

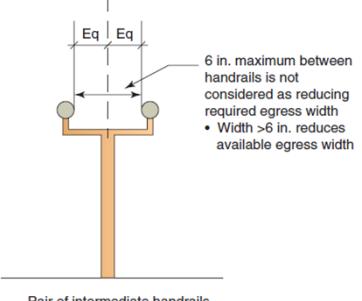
114

2015 IBC Significant Changes

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General handrail projection limit



Pair of intermediate handrails

2015 IBC Significant Changes

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2015 IBC Significant Changes

1016.2, 1020.6 Egress through Intervening Spaces and Corridor Continuity

CHANGE TYPE: Modification

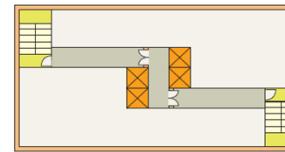
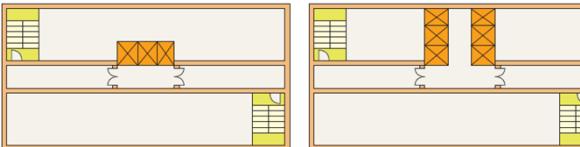
- A means of egress is now permitted through an elevator lobby provided access to at least one exit is available without passing through the lobby.



2015 IBC Significant Changes

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1016.2 Egress through Intervening Spaces



Exit access is permitted through an enclosed elevator lobby provided:

- Access to at least one exit shall be provided without travel through the lobby.
- Protection required for lobby is not required to extend to exit unless access to the exit is required by other sections (e.g., fire service access elevator lobby requires direct access to an exit stairway per Section 3007.6.1).



2015 IBC Significant Changes

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1017.2.2 Travel Distance Increase for Groups F-1 and S-1

CHANGE TYPE: Modification

TABLE 1016.2 1017.2 Exit Access Travel Distance^a

Occupancy	Without Sprinkler System	With Sprinkler System
	(feet)	(feet)
A, E, F-1, M, R, S-1	200	250 ^b
F-2, S-2, U	300	400 ^c

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:

[Section 412.7](#); For the distance limitations in aircraft manufacturing facilities.

[Section 1017.2.2](#); For increased distance limitation in Groups F-1 and S-1.

b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.



2015 IBC Significant Changes

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1017.2.2 Travel Distance Increase for Groups F-1 and S-1

General requirement:

Without sprinkler system

With sprinkler system

Allowed by Section 1017.2.2 where:
• Area using increase is limited to single story in height, and

- Minimum height to ceiling or roof is 24 feet, and
- Building is sprinklered throughout



2015 IBC Significant Changes

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2015 IBC Significant Changes

1018.3 Aisles in Groups B and M

CHANGE TYPE: Modification

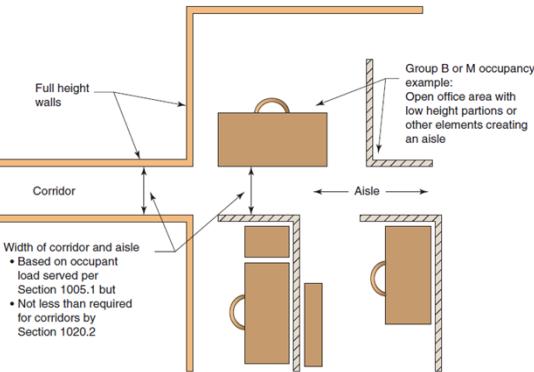
- The required width of aisles in Groups B and M occupancies is now consistent with the widths required for corridors and is no longer limited only to the capacity based on the occupant load served.



2015 IBC Significant Changes

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1018.3 Aisles in Groups B and M



2015 IBC Significant Changes

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1020.2 Corridor Width and Capacity

CHANGE TYPE: Clarification

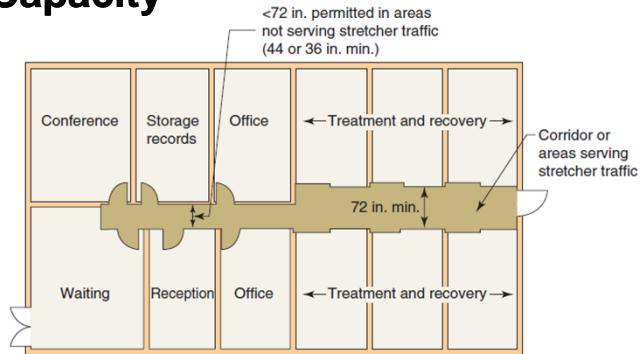
- A new exception helps to clarify the width requirements for corridors within Group I-2 occupancies for areas where bed or stretcher movement is not necessary.



2015 IBC Significant Changes

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1020.2 Corridor Width and Capacity



2015 IBC Significant Changes

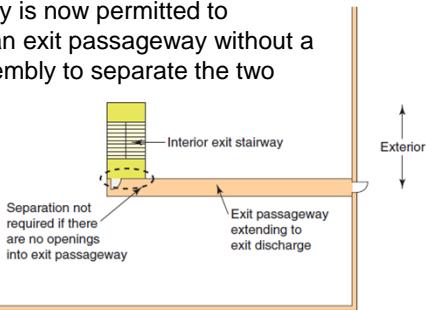
124

2015 IBC Significant Changes

1023.3.1 Stairway Extension

CHANGE TYPE: Modification

- An interior exit stairway is now permitted to continue directly into an exit passageway without a required fire door assembly to separate the two elements.



2015 IBC Significant Changes

125

1029.13.2.2.1 Stepped Aisle Construction Tolerances

CHANGE TYPE: Modification

- Stepped aisle**
 - Nonuniform riser height designed to maintain sightline (per Section 1029.13.2.2 Exception 1)**
 - Designed equal riser height**
- Construction tolerance:**
 - $\frac{3}{8}$ in. max. between adjacent risers if treads are less than 22 in. depth
 - $\frac{3}{4}$ in. max. between adjacent risers if treads are 22 in. or more in depth
 - $\frac{3}{16}$ in. max. between adjacent risers

2015 IBC Significant Changes

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Code or table number here
Page number here.

Direct learners to the code

- They will gain familiarity with the code book and also start to interpret the code for themselves
- Sections can direct learners elsewhere in the code and further their learning
- Discussions will ensue
- List the code number and page number
- List the table and put the table in this content area.

2015 IBC Significant Changes

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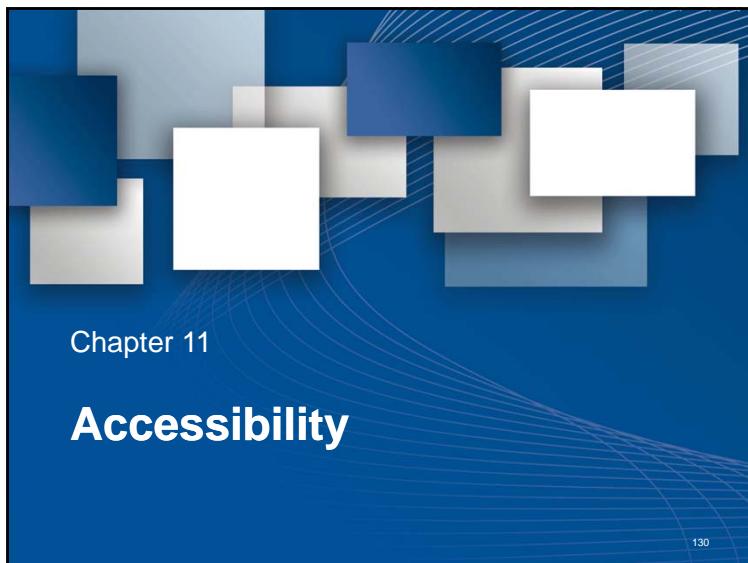
128

2015 IBC Significant Changes

 **Code Changes**

- Of the changes covered thus far, which will have the most impact on your job?

 2015 IBC Significant Changes 129



Chapter 11

Accessibility

130

1103.2.8 Areas in Places of Religious Worship

CHANGE TYPE: Modification

- Small areas used for religious ceremonies are now exempt from the access requirements.

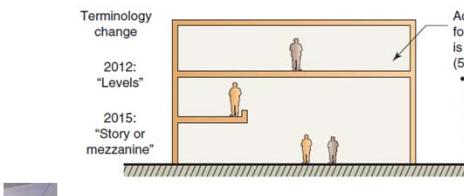


 2015 IBC Significant Changes 131

1104.4 Multistory Buildings and Facilities

CHANGE TYPE: Modification

- A distinction has been made between the requirements for access within a story and those with greater level changes, such as between stories or mezzanines.



Terminology change
2012: "Levels"
2015: "Story or mezzanine"

Accessible route exemption for level 3000 sq. ft. or less is not applicable to multi tenant (5 or more tenant spaces) where:

- At least one such tenant space used for sales or rental of goods and is located on a floor above or below the accessible level

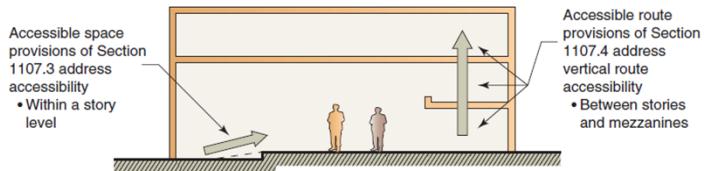
 2015 IBC Significant Changes 132

2015 IBC Significant Changes

1107.3, 1107.4 Accessible Spaces and Routes

CHANGE TYPE: Modification

- The provisions for connecting all spaces within a building have been modified to clearly identify the distinction for those with a change of elevation between stories or mezzanines.



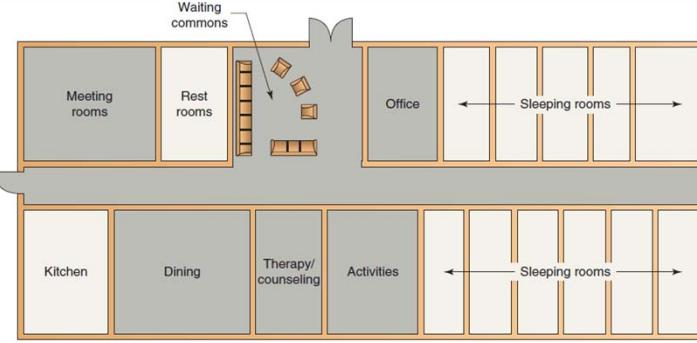
Accessible space provisions of Section 1107.3 address accessibility

- Within a story level

Accessible route provisions of Section 1107.4 address vertical route accessibility

- Between stories and mezzanines

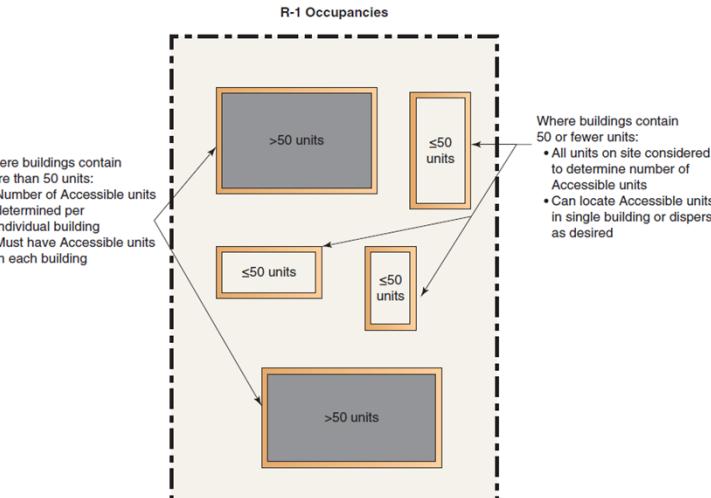
2015 IBC Significant Changes 133



Accessible Units in Group I-1 and R-4 Occupancies

I-1 Occupancies	R-4 Occupancies
Condition 1	Condition 2
$\geq 4\%$ but not less than 1	$\geq 10\%$ but not less than 1
At least 1	At least 2 units*

* Bedrooms within Group R-4 facilities shall be counted as sleeping units for the purpose of determining the number of units.



Where buildings contain more than 50 units:

- Number of Accessible units determined per individual building
- Must have Accessible units in each building

Where buildings contain 50 or fewer units:

- All units on site considered to determine number of Accessible units
- Can locate Accessible units in single building or dispersed as desired

R-1 Occupancies

1109.2 Accessible Water Closet Compartments

CHANGE TYPE: Modification

- In larger toilet rooms, a minimum of 5 percent of the water closet compartments must be wheelchair accessible and another minimum of 5 percent must be ambulatory accessible compartments.

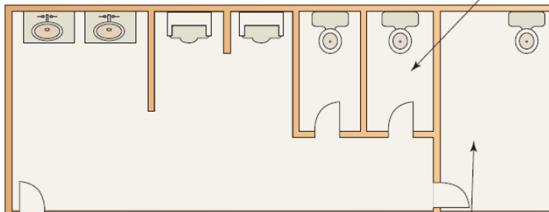
2015 IBC Significant Changes 136

2015 IBC Significant Changes

1109.2 Accessible Water Closet Compartments

At least 5% of compartments must be ambulatory accessible compartments where room has a total of six or more water closets and urinals.

- Previously only one was required
- Result is additional requirement if total >20



At least 5% of the water closets compartments must be wheelchair accessible.

- Previously only one was required
- Result is additional requirement if >20 water closet compartments

2015 IBC Significant Changes

137

1109.2.3 Accessible Lavatories

CHANGE TYPE: Modification

- In order to prevent the placement of the only accessible lavatory within an accessible stall where it would not be available to all users, the required accessible lavatory must now be located in a common area of the toilet room or bathing facility.

2015 IBC Significant Changes

138

1109.2.3 Accessible Lavatories

At least one accessible lavatory must be provided outside the water closet compartment.



The only accessible lavatory cannot be located within the accessible water closet compartment.

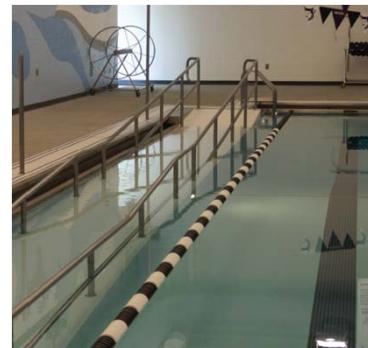
2015 IBC Significant Changes

139

1110 Recreational Facilities

CHANGE TYPE: Modification

- More detailed scoping requirements for recreational facilities have been included within the new Section 1110 to coordinate with the ADA and provide the scoping for technical requirements found within Chapter 11 of the A117.1 standard.



2015 IBC Significant Changes

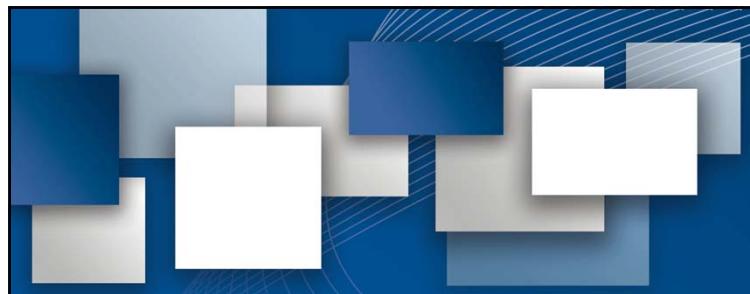
140

2015 IBC Significant Changes

 **Code Changes**

- Of the changes covered thus far, which will have the most impact on your job?

 2015 IBC Significant Changes 141



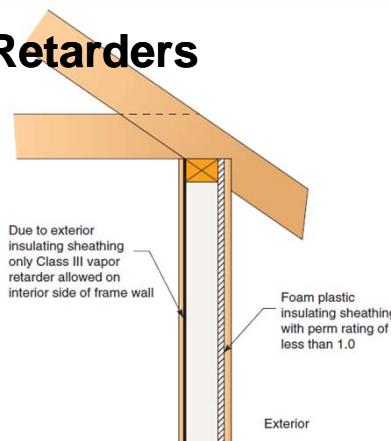
Chapters 12 through 26
Building Envelope, Structural Systems, and Construction Materials

142

1405.3 Vapor Retarders

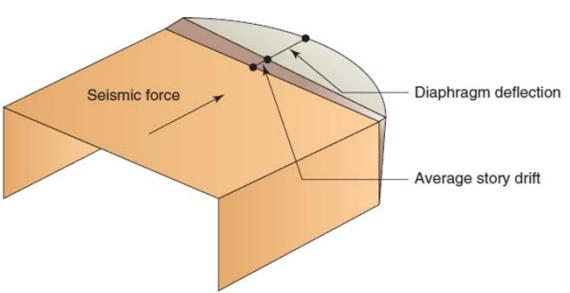
CHANGE TYPE:
Modification

- The required types and locations appropriate for each class of vapor retarder have been revised to also indicate where certain vapor retarders are not allowed to be installed.



Class III vapor retarder 143

1602.1 Definitions and Notations



Flexible diaphragm
Seismic force
Diaphragm deflection
Average story drift 144

2015 IBC Significant Changes

1603 Construction Documents

CHANGE TYPE:

Modification

- Two additional items related to snow load drifting are now required to be identified on the construction documents.



2015 IBC Significant Changes

145

1603.1.7 Flood Design Data

CHANGE TYPE:

Clarification

- The term "subject to high-velocity wave action" in regard to flood hazard areas has been replaced with "coastal high hazard areas" in several chapters and sections of the code.



2015 IBC Significant Changes

146

1603.1.8 Special Loads

CHANGE TYPE:

Addition

- The dead load of any rooftop-mounted photovoltaic (PV) solar panels must now be identified on the construction documents.



2015 IBC Significant Changes

147

1604.3 Serviceability

CHANGE TYPE:

Modification

- Modifications have been made to the deflection limits established in Table 1604.3 for interior partitions, wood members, and wind loads to both clarify and update the provisions.



2015 IBC Significant Changes

148

2015 IBC Significant Changes

1604.5 Risk Category

Approximate relationship between number of lives placed at risk by a failure and occupancy category per ASCE 7

CHANGE TYPE: Clarification

- In the application of assigning the appropriate risk category for a structure, Section 1604.5 has been revised to clarify that where standards refer to ASCE 7 Table 1.5-1, IBC Table 1604.5 should be used instead. In addition, descriptions for Risk Category III structures have been revised to include occupancy classifications to help clarify the intent.

2015 IBC Significant Changes 149

1607.5 Partition Loads

CHANGE TYPE: Modification

- In office buildings and in other buildings where the location of partitions is subject to change, partition loads are to be considered unless the floor is designed for an 80-psf or greater live load.

2015 IBC Significant Changes 150

1607.9 Impact Loads for Facade Access Equipment

CHANGE TYPE: Addition

- Provisions addressing impact loads for elements supporting facade access equipment and lifeline anchorages have been established.

2015 IBC Significant Changes 151

1607.10.2 Alternative Uniform Live Load Reduction

Percent of live load

Tributary area, A

650

2015 IBC Significant Changes 152

2015 IBC Significant Changes

1607.12 Roof Loads

CHANGE TYPE: Addition

- The term “vegetative roof” has been defined in Section 202 and a reference to ASTM E 2397 has been added to Section 1607.



2015 IBC Significant Changes

153

1609.1.1 Determination of Wind Loads

CHANGE TYPE: Modification

- A reference to the new wind tunnel testing standard ASCE 49 has been added to Section 1609.1.1, Exception 6.



2015 IBC Significant Changes

155

1607.12.5 Photovoltaic Panel Systems

CHANGE TYPE: Addition

- Design requirements for roof structures supporting photovoltaic (PV) solar panels and modules have been added to Section 1607.



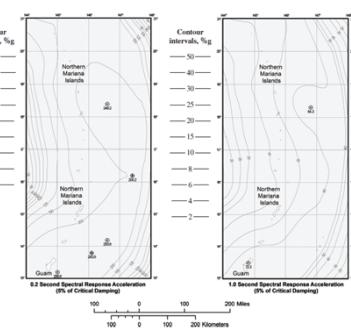
2015 IBC Significant Changes

154

1613.3.1 Mapped Acceleration Parameters

CHANGE TYPE: Addition

- The U.S. Geological Survey (USGS) recently developed seismic hazard and Risk-Targeted Maximum Considered Earthquake (MCER) ground motion maps for Guam and American Samoa, which have now been included in the IBC.



2015 IBC Significant Changes

156

2015 IBC Significant Changes

1613.5 Amendments to ASCE 7

CHANGE TYPE: Addition

- An amendment to the diaphragm anchorage requirements of Section 12.11.2 of ASCE 7 clarifies that the 2.5-to-1 aspect ratio applies to wood, wood structural panel or untopped steeldeck- sheathed subdiaphragms.



2015 IBC Significant Changes

157

1613.6 Ballasted Photovoltaic Panel Systems

CHANGE TYPE: Addition

- Seismic requirements for ballasted roof-mounted photovoltaic (PV) solar panels have been added to Section 1613.6.



2015 IBC Significant Changes

158

1704.5 Submittals to the Building Official

CHANGE TYPE: Addition

- Requirements for submittal of reports and certificates related to construction that is subject to special inspections and tests are now clearly specified.



2015 IBC Significant Changes

159

1705.2 Steel Construction

CHANGE TYPE: Modification

- The special inspection requirements for structural steel elements and cold-formed steel decks have been modified to coordinate the provisions with the new terminology used for structural steel elements within IBC Chapter 22, AISC 360 and the new SDI standard.



2015 IBC Significant Changes

160

2015 IBC Significant Changes

1705.2.3 Open Web Steel Joists and Joist Girders

CHANGE TYPE: Addition

- Special inspections are now required during the installation of open web steel joists and joist girders, and a new table specifies the type of inspection and applicable referenced standard.



2015 IBC Significant Changes

161

1705.11 Special Inspection for Wind Resistance

CHANGE TYPE: Clarification

- To better identify the intent, revisions have been made to the special inspection requirements for wind resistance. Specific requirements for the inspection of wind-resisting components have also been clearly identified.



2015 IBC Significant Changes

163

Table 1705.3 Required Special Inspections of Concrete Construction

CHANGE TYPE: Modification

- The requirement for special inspection of cast-in-place anchors in concrete where allowable loads have been increased or strength design is used has been deleted from Table 1705.3, specific requirements for the design and installation of adhesive anchors are now included in ACI 318, and continuous special inspection has been added for these types of anchors installed horizontally or in upwardly inclined orientations with sustained loads.



2015 IBC Significant Changes

162

1705.12 Special Inspection for Seismic Resistance

CHANGE TYPE: Addition

- Periodic special inspection of cold-formed steel special bolted moment frames (CFS-SBMFs) is now mandated. In addition, several modifications to the special inspection requirements for seismic resistance have been made in order to clarify the intent.



2015 IBC Significant Changes

164

2015 IBC Significant Changes

1708.3.2 Static Load Testing

CHANGE TYPE: Modification

- Static load test requirements have been revised to clarify the intent, the arbitrary factor of two has been removed, and the method for testing components that carry dynamic loads has been specified. Differences influenced by load duration effects when testing wood elements are now also addressed.



2015 IBC Significant Changes

165

1711 Material and Test Standards

CHANGE TYPE: Deletion

- The requirements for testing joist hangers in Section 1711.1 have been deleted entirely, and the requirements for testing concrete and clay roof tiles in Section 1711.2 have been relocated to Section 1504 addressing performance requirements for roof coverings and assemblies.



2015 IBC Significant Changes

167

1709.5 Exterior Window and Door Assemblies

CHANGE TYPE: Modification

- The required design pressure ratings for exterior window and door assemblies are to be done on an allowable stress design basis.



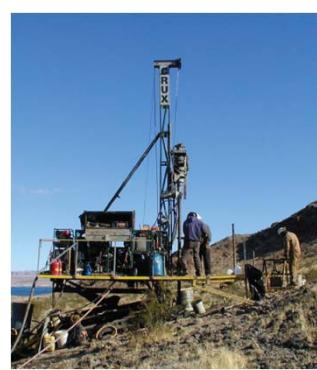
2015 IBC Significant Changes

166

1803.5 Investigated Conditions

CHANGE TYPE: Modification

- The requirements addressing the evaluation of rock materials for foundation support have been updated to be more consistent with current geotechnical engineering practice. In addition, basic requirements for providing adequate underpinning and excavations have been added.



2015 IBC Significant Changes

168

2015 IBC Significant Changes

1804.1 Excavation Near Foundations

CHANGE TYPE: Addition

- Basic requirements for providing safe and adequate underpinning at excavations have been added because the code was not specific on how to address excavations adjacent to structures.



2015 IBC Significant Changes

169

1810.2.5 Group Effects

CHANGE TYPE: Clarification

- The requirements related to the evaluation of group effects on uplift of grouped deep foundation elements have been clarified.



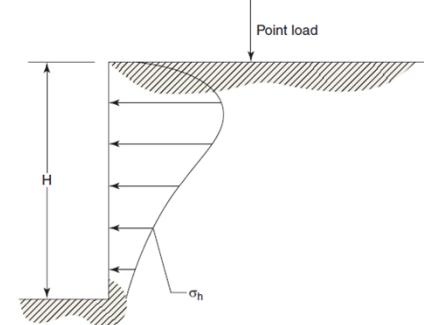
2015 IBC Significant Changes

171

1808.3 Design Surcharge Loads

CHANGE TYPE: Addition

- Requirements pertaining to surcharge loads that could affect an adjacent structure have been added.



2015 IBC Significant Changes

170

1810.3 Design and Detailing

CHANGE TYPE: Addition

- Provisions addressing structural steel sheet piles have been added and the code provisions and standards related to steel deep foundation systems have been updated to clarify their intent.



2015 IBC Significant Changes

172

2015 IBC Significant Changes

1901.3 Anchoring to Concrete

CHANGE TYPE: Modification

- Sections 1908 and 1909 of the 2012 IBC, which contain the requirements for anchorage to concrete, have been deleted because they are obsolete and not consistent with current referenced standards. In their place, new provisions on anchoring to concrete have been added to the general provisions found in Section 1901.



2015 IBC Significant Changes

173

1904 Durability Requirements

CHANGE TYPE: Modification

- The durability requirements for structural concrete have been deleted from the IBC and replaced by a reference to the durability provisions in ACI 318.



2015 IBC Significant Changes

175

1901.4 Composite Structural Steel and Concrete Structures

CHANGE TYPE: Modification

- Section 1912 of the 2012 IBC containing specific requirements for concrete-filled pipe columns has been deleted because it is no longer necessary, as new provisions on composite structural steel and concrete structures have been added to the general provisions in Section 1901.



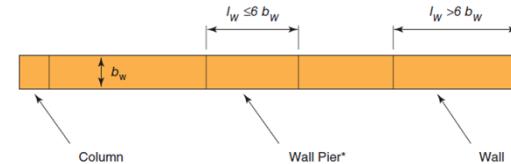
2015 IBC Significant Changes

174

1905.1.3 Modifications to ACI 318, Section 18.5

CHANGE TYPE: Modification

- The requirements for the design of wall piers have been deleted from Section 1905 because they are now addressed in ACI 318.



* Ratio of clear height to horizontal length (h_w / l_w) greater than or equal to 2.0

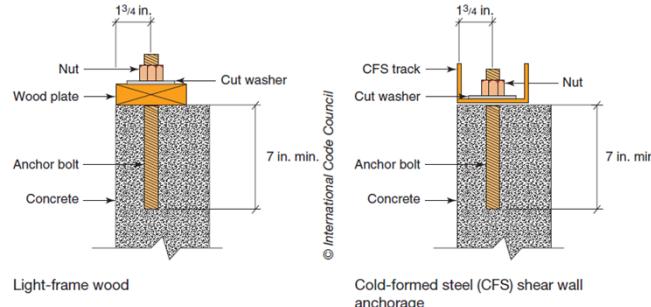


2015 IBC Significant Changes

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2015 IBC Significant Changes

1905.1.8 Modifications to ACI 318, Section 17.2.3



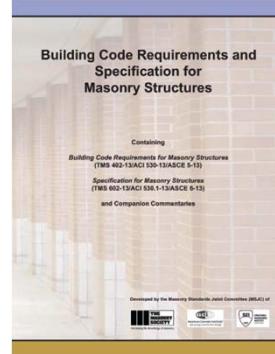
2015 IBC Significant Changes

177

2101.2 Masonry Design Methods

CHANGE TYPE: Modification

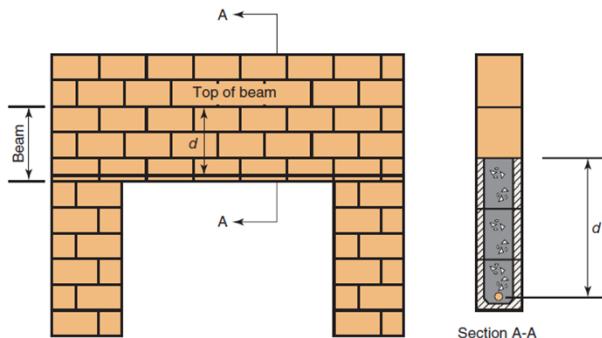
- The references in Chapter 21 to specific sections in the Masonry Standards Joint Committee (MSJC) code have been deleted because the 2013 edition of TMS 402/ACI 530/ASCE 5 has been substantially reorganized to be more user-friendly. The charging language of Section 2101.2 has been modified to simply reference TMS 402/ACI 530/ASCE 5 or TMS 403 for the design and construction of masonry structures.



2015 IBC Significant Changes

178

2103 Masonry Construction Materials



2015 IBC Significant Changes

179

2104 Masonry Construction

CHANGE TYPE: Modification

- Many masonry construction provisions previously found in Section 2104 that are contained in the MSJC Specification TMS 602/ACI 530.1/ASCE 6 have been deleted and replaced with references to the specification.



2015 IBC Significant Changes

180

2015 IBC Significant Changes

2105 Quality Assurance

CHANGE TYPE:

Modification

- Provisions for the quality assurance of masonry structures and related definitions have been deleted from Section 2105 and replaced with a reference to the MSJC Specification TMS 602/ACI 530.1/ASCE 6 and the special inspection and testing requirements contained in Chapter 17.



2015 IBC Significant Changes

181

2210 Cold-Formed Steel

CHANGE TYPE:

Modification

- A new Steel Deck Institute (SDI) standard addressing the design and construction of composite concrete slabs and steel decks has been added to IBC Chapter 35.



2015 IBC Significant Changes

183

2111, 2113 Masonry Fireplaces and Chimneys

CHANGE TYPE:

Clarification

- The definitions of "masonry fireplace" and "masonry chimney" have been deleted from Chapter 21 and appropriately relocated to Chapter 2. Requirements for the reinforcement and anchorage of masonry fireplaces and chimneys in Sections 2111 and 2113 have been updated and reorganized to clarify the intent.



2015 IBC Significant Changes

182

2211 Cold-Formed Steel Light-Frame Construction

CHANGE TYPE:

Modification

- A new American Iron and Steel Institute standard, AISI S220, is now referenced for the construction of cold-formed steel light-frame non-structural products.



2015 IBC Significant Changes

184

2015 IBC Significant Changes

2303.1.4 Structural Glued Cross-Laminated Timber

CHANGE TYPE: Addition

- A new definition for a wood-based product identified as cross-laminated timber (CLT) has been added to Chapter 2. The new manufacturing standard ANSI/APA PRG 320 is now referenced in Chapter 23 and has been added to Chapter 35.



2015 IBC Significant Changes

185

2303.1.13 Engineered Wood Rim Board

CHANGE TYPE: Addition

- A new definition for engineered wood rim board has been added to Chapter 2 and two new standards are now referenced in Chapter 23 and have been added to Chapter 35.



186

2304.6 Exterior Wall Sheathing

CHANGE TYPE: Modification

- Section 2304.6 has been modified to establish minimum structural performance requirements and clarify that wall sheathing on the outside of exterior walls, as well as connection of sheathing to framing, must be capable of resisting wind pressures in accordance with Section 1609, which in turn references ASCE/SEI 7-10. The new term "gable" has been added to clarify that exterior wall sheathing requirements for out-of-plane wind resistance are equally applicable to the gable area at end walls.



2015 IBC Significant Changes

187

2304.10.6 Load Path

CHANGE TYPE: Modification

- The minimum required thickness of steel straps used to splice discontinuous framing members has been modified to be consistent with the standard thickness established in the new AISI Product Data Standard, S201.



2015 IBC Significant Changes

2304.12 Protection Against Decay and Termites

CHANGE TYPE:

Modification

- Modifications to Section 2304.12 identify exactly where waterborne preservatives are required and where they are not required.



2015 IBC Significant Changes

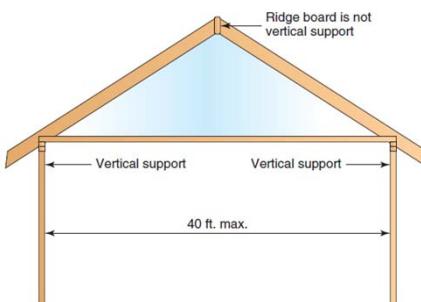
189

2308.2.5 Allowable Roof Span

CHANGE TYPE:

Modification

- Provisions related to limitations on roof span have been clarified as a part of the reformatting and reorganization of Section 2308.



Rafter, ceiling joist, and ridge board framing

2015 IBC Significant Changes

191

2308 Conventional Light-Frame Construction

CHANGE TYPE: Modification

- Section 2308, which contains prescriptive requirements for conventional wood frame construction, has been reformatted and reorganized in its entirety. Significant changes include the introduction of new designations for wall bracing methods similar to those in the IRC as shown in new Table 2308.6.3(1), and reformatted wall bracing requirements set forth in Table 2308.6.1.



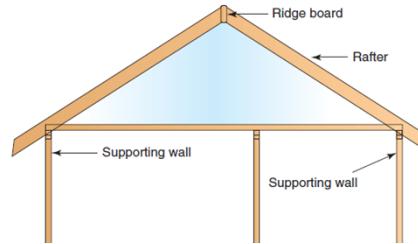
2015 IBC Significant Changes

190

2308.7 Roof and Ceiling Framing

CHANGE TYPE: Modification

- Ceiling joist and rafter span tables from the IRC have been incorporated into the conventional construction provisions of the IBC.



2015 IBC Significant Changes

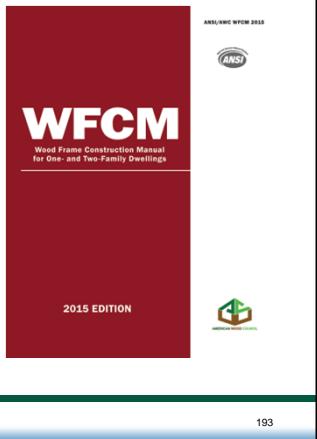
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2015 IBC Significant Changes

2309 Wood Frame Construction Manual

CHANGE TYPE: Addition

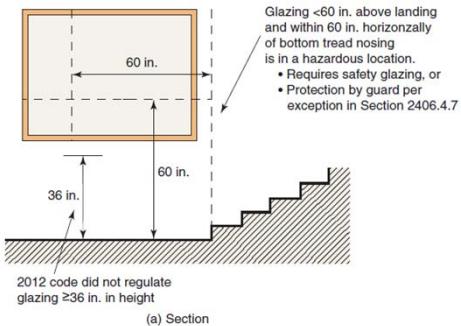
- Section 2309 has been added to reference the American Wood Council's (AWC) *Wood Frame Construction Manual* (WFCM) for structural design of wood frame buildings assigned to Risk Category I or II.



2015 IBC Significant Changes

193

2406.4.7 Safety Glazing Adjacent to Bottom Stair Landing



(a) Section

2015 IBC Significant Changes

195

2406.4.7 Safety Glazing Adjacent to Bottom Stair Landing

CHANGE TYPE: Modification

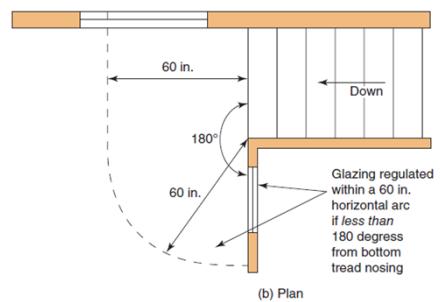
- The height criteria for regulating glazing at the landing at the bottom of a stair has been revised and the method for measuring the horizontal distance has been clarified, now generally requiring safety glazing if located less than 60 inches above the bottom landing of a stair.



2015 IBC Significant Changes

194

2406.4.7 Safety Glazing Adjacent to Bottom Stair Landing



(b) Plan

Requirement for safety glazing adjacent to bottom stairway landing



2015 IBC Significant Changes

196

2015 IBC Significant Changes

Chapter 25 Gypsum Panel Products

CHANGE TYPE: Addition

- The definition of "gypsum board" has been revised and a new definition for "gypsum panel product" has been added to Chapter 2. Multiple references to gypsum panel products have also been added to Chapter 25 where applicable.



2015 IBC Significant Changes

197

2612 Plastic Composites

CHANGE TYPE: Addition

- New definitions and applicable test standards now address the use of plastic composites for use as exterior deck boards, stair treads, handrails and guards.



2015 IBC Significant Changes

198



Code Changes

- Of the changes covered thus far, which will have the most impact on your job?

2015 IBC Significant Changes

199



Chapters 27 through 34 Building Services, Special Devices, and Special Conditions

200

2015 IBC Significant Changes

2902.3 Public Toilet Facilities

CHANGE TYPE: Modification

- Limited-size quick-service tenant spaces are no longer required to provide toilet facilities for the public customers.

Toilet facilities for the public are not required

Employee restroom

Employee work area

Customer service counter

Public access area ≤ 300 sq. ft.

Access to public toilet facilities not required

2015 IBC Significant Changes

201

3004 Elevator Hoistway Venting

Elevator hoistway

Roof

Hoistway venting requirements deleted from 2015 IBC
• Venting is not required

2012 IBC venting typically required where elevator or dumbwaiter penetrated more than three stories.

Hoistway venting is not required

2015 IBC Significant Changes

202

3006 Elevator Lobbies

CHANGE TYPE: Modification

- The elevator lobby requirements have been relocated from Section 713.14.1, where they were previously included with the general shaft enclosure requirements, to Chapter 30, which addresses elevators.

2015 IBC Significant Changes

203

3006 Elevator Lobbies

Protection of hoistway door opening required. (See exceptions.)

Options to protect include:

- Enclosed elevator lobbies
- Additional door
- Hoistway pressurization

Elevator hoistway connecting more than 3 floors

Hoistway door opening protection is not required if elevator travels 75 ft. or less
• 2012 limited to floors 75 ft. or less above fire department vehicle access

<75 ft.

Exterior walkway

Elevator

Protection of hoistway doors not required where hoistway opens to exterior

2015 IBC Significant Changes

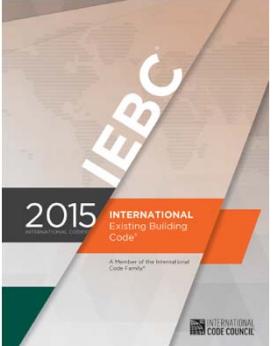
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2015 IBC Significant Changes

Chapter 34 Existing Structures

CHANGE TYPE: Deletion

- Chapter 34 has been deleted from the IBC in its entirety, and existing buildings will now be solely regulated by the *International Existing Building Code* (IEBC).



2015 INTERNATIONAL Existing Building Code®
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INTERNATIONAL CODE COUNCIL

2015 IBC Significant Changes 205



Code Changes

- Of the changes covered thus far, which will have the most impact on your job?

2015 IBC Significant Changes 206



Final Reflection

- This slide will help the learner to reflect on the day and what they will take back to the job and apply.

2015 IBC Significant Changes 207

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2015 IBC Significant Changes

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