2024 IBC Significant Nonstructural Changes

1

Objectives

- Identify the differences between selected nonstructural provisions of the 2024 IBC and the 2021 edition.
- Determine if the change is an addition, deletion, modification or clarification.
- Identify changes in format and technical requirements.
- Explain the intent and application of the changes.

2

2

Topics

- Administration and Definitions, 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 Materials, Chapters 12 through 26
- Building Services, Special Devices, and Special Conditions, Chapters 27 through 34
- Appendices

3

3

Copyright 2023 International Code Council

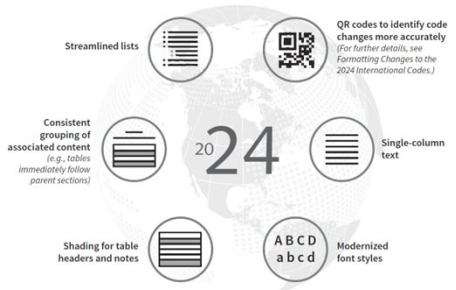
Letter Designations in Front of Section Numbers

- In each code development cycle, proposed changes to the code are considered at the Code Development Hearings.
- Proposed changes to a code section that has a number beginning with a letter in brackets are considered by a different code development committee.
  - **[A]** Administrative
  - **[E]** Energy
  - **[EB]** Existing Building
  - **[F]** Fire
  - **[FG]** Fuel Gas
  - **[M]** Mechanical
  - **[P]** Plumbing

4

4

Format Changes to the I-Codes



5

5

Part 1

- Administration
  - Chapter 1 Scope and Administration
  - Chapter 2 Definitions

6

6

Copyright 2023 International Code Council

104 Building Official Duties and Powers

- Provisions of Section 104 have been reformatted for consistency with other I-Codes
- In addition, approach for reviewing for code compliance significantly updated to reflect current manner that alternate materials, methods and designs are evaluated
- Four methods identified for determination of compliance:
  - Listed compliance
  - Technical assistance
  - Alternate materials, design and methods
  - Modifications

7

7

104 Building Official Duties and Powers

- For listed compliance, listing to be based on specified standard.
  - Where listing standard is not specified, listing to be based on an approved listing criteria.
- Technical assistance to be used to determine compliance where required by building official, with technical opinion and report prepared by a qualified individual, laboratory or organization.
- Performance-based alternatives acceptable when complying with *ICC Performance Code*.
  - Not applicable to alternative structural materials or alternative structural designs.

8

8

105.2 Fences Not Exempt from Permit

- Fences up to 7 feet in height no longer exempt from permit requirements where utilized as a swimming pool barrier.
- Recognizes life safety protection provided by minimum fence height, limitation on size of any openings, lack of climbability, and controlled gate access.
- Permit requirement provides mechanism for ensuring fence and its installation go through the plan review and inspection process.

9

9

202 Definition—High-Rise Building

- Special provisions, found primarily in Section 403, are mandated for buildings defined as "high-rise"
- Historically, such buildings are those with an occupied floor more than 75 feet above the lowest level of fire department vehicle access
- "High-rise" designation now also applies where occupiable roof is located above the 75-foot point
- Applicable concerns include:
  - Presence of occupants
  - Combustible furnishings
  - Difficulty of performing ground-based operations

10

10

202 Definition—Limited Verbal or Physical Assistance

- Applicable to Group I-1 and R-4 occupancies, more clarity is provided for determining if Condition 2 designation is appropriate for group homes, assisted living facilities and other custodial care uses
- Category includes persons who may not independently recognize, respond or evacuate without limited verbal or physical assistance during an emergency situation
- Limited verbal assistance includes prompting, giving and repeating instructions
- Limited physical assistance includes help with transfer to walking aids or mobility devices and assistance with egress

11

11

Part 2

- Building Planning
  - Chapter 3 Occupancy Classification and Use
  - Chapter 4 Special Detailed Requirements Based on Occupancy and Use
  - Chapter 5 General Building Heights and Areas
  - Chapter 6 Types of Construction

12

12

Copyright 2023 International Code Council

304.1 Group B Occupancy Classification

- Electronic data processing has been modified to electronic data entry
  - Data entry is considered an activity performed in an office environment
  - Data processing is essentially automated work occurring in facilities typically accessed solely by maintenance personnel
    - More appropriately classified as Group F
- Lithium-ion and lithium metal battery testing, research and development activities newly addressed specifically and identified as Group B
  - Moderate-hazard classification is appropriate due to extensive protection features as established in IFC 1207, including:
    - Detection
    - Suppression
    - Explosion control

13

13

306.2 Group F Occupancy Classification

- Distilleries and similar alcohol beverage alcoholic beverage manufacturing facilities now considered as Group F-1. occupancies where alcohol content exceeds 20 percent.
  - Previous threshold for Group F-1 classification was 16 percent.
  - Group F-2 classification now applicable where alcohol content is 20 percent or less.
- Provides consistency with recognition that:
  - Beverages with alcohol content greater than 20 percent is considered an ignitable liquid requiring further regulation.
  - Where alcohol content does not exceed 20 percent, beverages in glass or ceramic containers considered as Class I commodities.

14

14

306.2 Group F Occupancy Classification

- Group F-1 occupancy classification also now includes:
  - Energy storage systems (ESS) and equipment containing lithium-ion or lithium metal batteries
  - Manufacture of lithium-ion batteries
  - Manufacture and assembly of vehicles powered by lithium-ion or lithium metal batteries
- Recognition as Group F-1 based on moderate degree of hazard due to large part to safeguards mandated in IFC.

15

15

Copyright 2023 International Code Council

307.1.1, 414.1 Group H Occupancy Exemptions

- Provides for a more organized and comprehensive presentation of those conditions and materials that are exempt from:
  - Classification as a Group H occupancy, and
  - Needing to comply with any of general hazardous material regulations
- Replaces previous listing of exceptions in Section 307.1.1 and applicable notes to Tables 307.1(1) and 307.1(2)

16

16

307.1.1, 414.1 Group H Occupancy Exemptions

TABLE 307.1.1 HAZARDOUS MATERIAL EXEMPTIONS[a]

Material Classification	Occupancy or Application	Exemption
Combustible fiber	Baled Cotton	Densely packed baled cotton shall not be classified as combustible fiber, provided that the bales comply with the packing requirements of ISO 8115
Corrosive	Building materials	The quantity of commonly used building materials that are classified as corrosive materials is not limited
	Personal and household products	The quantity of personal and household products that are classified as corrosive materials is not limited in retail displays, provided that the products are in original packaging.
	Retail and wholesale sales occupancies	The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited. To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.

(continued)

17

17

307.1.1, 414.1 Group H Occupancy Exemptions

2018 to 2024 IBC Format Changes for Group H Occupancy Exemptions

Material Classification	Occupancy or Classification	2021 Source
Combustible fiber	Baled cotton	Table 307.1(1), note o
Corrosive	Building materials	Section 307.1.1, item 11
	Personal and household products	Section 307.1.1, item 10
	Retail and wholesale sales occupancies	Table 307.1(2), note c
Explosives	Groups B, F, M and S	Section 307.1.1, item 14
	Groups M and R-3	Section 307.1.1, item 14
Flammable and combustible liquids and gases	Aerosols	Section 307.1.1, item 12
	Alcoholic beverages	Sections 307.1.1, items 6, 18 and 19; Table 307.1(1), note c
	Cleaning establishments with combustible liquid solvents	Section 307.1.1, items 4 and 5
	Closed piping systems	Section 307.1.1, item 3
	Fuel	Table 307.1(1), notes p #1 - #4
	Fuel oil	Table 307.1(1), note i

(continued)

18

18

310.4 Group R Occupancy Classification

- In addition to several clarifications of various residential uses, the lodging house provisions have been revised.
  - Emergency services living quarters introduced as congregate living facilities
- Scoping provisions for bed and breakfast establishments and similar lodging houses classified as a Group R-3 occupancy no longer mandate a maximum of 10 occupants
- In addition, no longer an occupant load limit required for construction of an owner-occupied lodging house under the *International Residential Code*
- Threshold of five guest rooms remains as sole factor for lodging house classification

19

19

311.2 Group S Occupancy Classification

- Group S-1 classification for storage of lithium-ion and lithium metal batteries, as well as repair garages for vehicles powered by lithium-ion or lithium metal batteries consistent with Group F-1 manufacturing classification for similar materials and activities.
- In addition, storage of aerosol cooking spray and plastic aerosol 3 products to be considered Group S-1 occupancies.
- Classification as Group S-1 and S-2 facilities where alcohol beverages are stored consistent with Group F-1 and F-2 manufacturing designations based on threshold of 20 percent alcohol content.

20

20

403.5.3 High-rise Building Stairway Door Operation

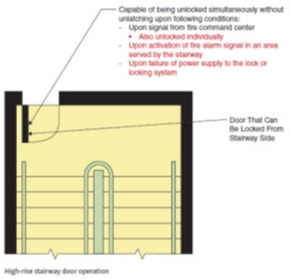
- Where stairway doors in high-rise buildings designed to be locked from the stairway side, two new conditions established for unlocking doors.
- Such stairway doors to be capable of being unlocked simultaneously without unlatching upon:
  - Activation of fire alarm signal in area served by the stairway, or
  - Failure of power supply to lock or unlocking system.
- Simultaneous unlocking of doors continues to be required upon a signal from the fire command center.
- Additional measures recognize there may be situations where occupant travel to other stories is necessary prior to arrival of personnel at fire command center.

21

21

Copyright 2023 International Code Council

403.5.3 High-rise Building Stairway Door Operation



22

22

404.6 Enclosure of Atriums

- In Group I-1, Condition 2 and Group I-2 occupancies, the permissible omission of the fire barrier between an atrium and adjoining areas for up to three stories is now only acceptable where three conditions are met:
  - Not applicable where adjoining areas include care recipient sleeping or treatment rooms
  - Permissible adjoining areas accounted for in design of smoke control system
  - Access to care recipient sleeping or treatment rooms not provided through other spaces open to the atrium.
- Modification provides equivalency between IBC and federal guidelines for certification of health care facilities.

23

23

407.4.4.4 Circulation Paths Within a Care Suite

- Circulation paths within a care suite that lead to required egress doors to be a minimum of 36 inches in width.
- Such paths are not to be regulated as aisles or corridors.
- New provisions clarify intent of care suite provisions recognizing increased supervision of patients is required.

24

24

Copyright 2023 International Code Council

411.1 Puzzle Rooms

- Puzzle rooms no longer required to comply with Section 411 regulating special amusement areas where the means of egress meets the fundamental requirements of Chapter 10
  - Unlocked
  - Readily available
  - Always available
- Previously, puzzle room exiting had to comply with one of three options:
  - Compliance with Chapter 10
  - Alternative design approved by building official
  - Exit system open and readily available upon activation by automatic fire alarm system, automatic sprinkler system, and a manual control at a constantly attended location

25

25

411.3 Special Amusement Area Alarms

- Requirements addressing the detection and notification of fire conditions in special amusement areas have been clarified and correlated with IFC provisions.
- An automatic smoke detection system to be provided "throughout" buildings containing special amusement areas, along with an emergency voice/alarm communication (EVAC) system.
- Provisions established for:
  - Alarm pre-signal
  - Alarm activation
  - EVAC system

26

26

423.4.1, 423.5.1 Storm Shelter Design Occupant Capacity

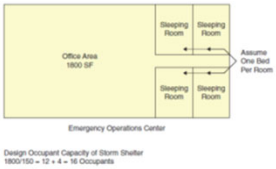
- Required design occupant capacity of storm shelters has been newly established for critical emergency operations facilities and modified for Group E occupancies.
- Applicable to both types of facilities, a new exception allows for a reduction in occupant capacity below that calculated is permitted where approved by building official.
  - Similar to allowance in Section 1004.1.2 for means of egress.
- Both emergency operations and educational facilities now provided with same:
  - Three exceptions to base requirement, and
  - Limitations on distance of travel to door of the shelter.

27

27

423.4.1, 423.5.1 Storm Shelter Design Occupant Capacity

- Required design capacity of storm shelters:
  - For critical operation facilities, total occupant load of offices plus number of beds.



  - For Group E occupancies, total occupant load of classrooms, vocational rooms and offices (largest assembly space criteria no longer applicable)

28

28

503.1.4.1 Occupiable Roof Enclosures

- Where a high-rise building includes an occupiable roof, barriers and similar structures may now exceed 48 inches in height without classification of roof as an additional story.
- Includes variety of elements, including parapets, guards and bulkheads that would not necessarily be addressed under the allowances for penthouses and other rooftop structures.

29

29

Table 509.1 Incidental Uses

- Sprinkler protection is now mandated in the following incidental use areas in ambulatory care facilities:
  - Storage rooms greater than 50 square feet
  - Waste and linen collection rooms with an aggregate volume of 8.67 cubic feet or greater
- Such rooms now require both the previously mandated 1-hour fire barrier/horizontal assembly separations as well as the new mandate for sprinkler protection
- Additional changes include lowering the following thresholds for inclusion as an incidental use for consistency with CMS federal standard:
  - Waste/linen collection rooms: Reduction from $\geq$ 10 cf to $\geq$ 8.67 cf
  - Storage rooms: Reduction from < 100 sf to < 50 sf

30

30

Copyright 2023 International Code Council

Table 509.1 Incidental Uses

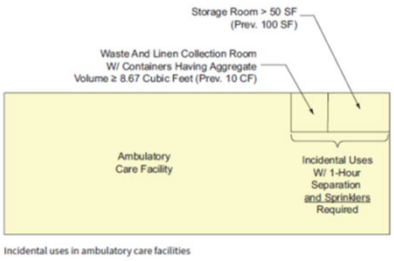
TABLE 509.1 INCIDENTAL USES

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 ~~10~~ 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 ~~100~~ 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.

31

31

Table 509.1 Incidental Uses



Incidental uses in ambulatory care facilities

32

32

510.2 Horizontal Building Separations

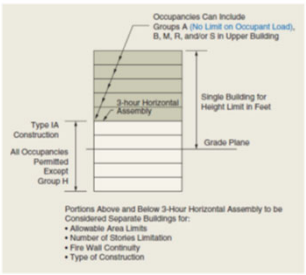
- Where the horizontal building separation allowance (podium buildings) of Section 510 is applied, the restriction on occupant loads for the upper building has been eliminated
- Previously, the only Group A occupancies permitted above the podium level were those with an occupant load of less than 300
- In addition, where vertical offsets occur in the horizontal separation required between the upper and lower buildings, the offsets shall be constructed as for fire barriers

33

33

Copyright 2023 International Code Council

510.2, #5 Horizontal Building Separations

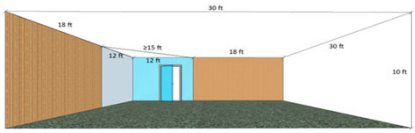


34

34

602.4.2 Exposed Mass Timber in Type IV-B Construction

- The allowable unprotected mass timber on the ceilings of Type IV-B buildings has been increased from 20% to 100%
  - Revisions are based on fire research conducted at the Research Institute of Sweden
  - Tests exhibited satisfactory performance in that no significant fire growth was observed and temperatures within the compartment decreased continuously until the end of the four-hour test
- The separation distance between unprotected mass timber elements is now only required for walls

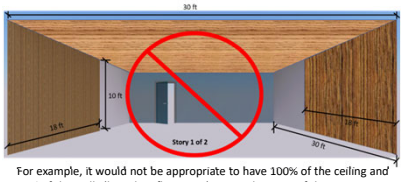


35

35

602.4.2 Exposed Mass Timber in Type IV-B Construction

- In addition, multiple-story floor areas are prohibited from being used to determine the allowable exposed mass timber in ceilings and walls in multi-story dwelling units and fire areas
  - Prohibition due to no testing of such conditions
- Each story to be evaluated on a story-by-story basis



For example, it would not be appropriate to have 100% of the ceiling and 60% of the walls (based on floor area) exposed on one of the two stories.

36

36

602.4.4.3 Concealed Spaces in Type IV-HT Construction

- In buildings of Type IV-HT construction, the allowance for concealed spaces provided with protected surfaces has been clarified.
  - Where the method of protection is the sheathing of all exposed surfaces within the concealed space with minimum 5/8-inch Type X gypsum board, only those surfaces that are considered 'combustible' need to be covered.
- No change to the other permissible methods of:
  - Sprinklered building including sprinklered concealed spaces
  - Complete filling of spaces with noncombustible insulation

37

37

603.1 Combustible Vapor Retarders in Types I and II Construction

- Combustible vapor retarders, as required by Section 1404.3 based on climate zone, are now specifically permitted in buildings of Type I and II construction.
  - Level of combustibles, along with their control, do not adversely impact fire severity potential.
- In addition, the permissible use of combustible plumbing fixtures in Type I and II buildings is now specifically identified.
  - Use of plastic fixtures deemed acceptable as standards regulating such fixtures require testing for ignitability.

38

38

Part 3

- Fire Protection
  - Chapter 7 Fire and Smoke Protection Features
  - Chapter 9 Fire Protection and Life Safety Systems

39

39

Copyright 2023 International Code Council

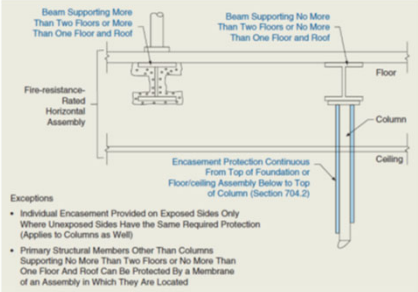
704.2, 704.3 Protection of Primary and Secondary Structural Members

- For clarity purposes, provisions addressing primary and secondary structural members have been reformatted in two sections.
- Section 704.2 now covers protection of primary structural frame members, including columns.
  - New exception recognizes that individual encasement is permitted on exposed sides of columns provided unexposed sides have same required protection.
- Section 704.3 now addresses secondary structural members.

40

40

704.2, 704.3 Protection of Primary and Secondary Structural Members



41

41

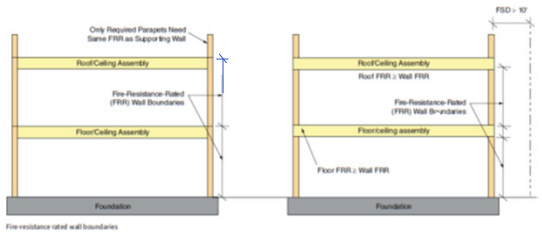
705.6 Exterior Wall Fire Rating Continuity

- The continuity requirements for the fire-resistance rating of exterior walls are now addressed for two conditions
- The required rating shall extend from the top of the foundation or floor/ceiling below to one of the following:
  - Underside of floor or roof sheathing , deck or slab above, or
  - Underside of floor/ceiling or roof/ceiling assembly having a fire-resistance rating ≥ the exterior wall, and the fire separation distance > 10 feet

42

42

705.6 Exterior Wall Fire Rating Continuity



43

43

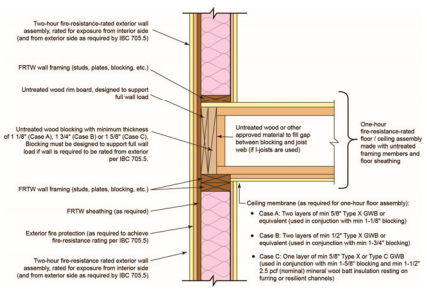
705.7.1 Exterior Wall/Floor Intersections in Type III Construction

- New provisions for load-bearing exterior walls in Type III construction clarify detailing where floors intersect the exterior wall in typical "platform" framing
- Fire-resistance rating of portion of floor assembly that supports exterior wall to be ≥ than the rating required for the exterior wall per Table 601
  - The rating provided by the portion of the floor assembly supporting and within the plane of the exterior wall is permitted to include the contribution of the ceiling membrane when considering exposure from fire to the inside
- Where wall is load-bearing, floor construction within plane of the exterior wall to be in accordance with requirements for interior building elements of Type III construction
  - Includes rim joists, rim boards and blocking

44

44

705.7.1 Exterior Wall/Floor Intersections in Type III Construction



45

45

706.1.2, 706.2 Fire Walls—Deemed to Comply

- The use of NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls and Fire Barrier Walls*, was previously recognized as acceptable for dealing with structural stability requirement of IBC
- Fire walls now may be fully designed and constructed in accordance with NFPA 221, except where IBC addresses similar issues
  - For example, NFPA 221 does not contain any requirement for fire wall fire-resistance ratings. Therefore, provisions of IBC Section 706.4 will apply

46

46

707.6 Fire Walls—Openings in Shaft Enclosures

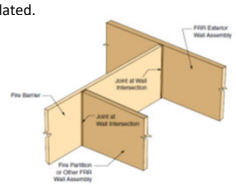
- Additional exceptions addressing limitations on openings and penetrations in shaft enclosures now provided.
- Limits on opening surface areas and/or aggregate opening width/length of wall percentages no longer applicable at:
  - Shaft openings providing entrance to an elevator car
  - Shaft enclosures per Section 713
  - Openings serving chute access rooms or chute discharge rooms
- Limitations on length of openings not practical based upon use of various shafts, while opening percentage limits at elevator hoistway doors regulated by ASME A17.1.

47

47

707.8 Fire Barrier Joints

- Joints must now be protected at intersections of fire barriers and all other fire-resistance-rated wall assemblies.
  - Previously, the only wall-to-wall joint conditions where joint protection was specifically required were at fire barrier-to-fire barrier and fire barrier-to-exterior wall intersections.
- Now fire barrier intersections with smoke barriers, fire walls, and other fire-resistance-rated wall assemblies will be regulated.



48

48

707.9, 715.2, 715.6 Continuity of Head-of-Wall Systems

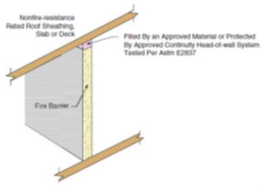
- An option for protecting voids at the intersection of a fire barrier and the underside of a nonfire-resistance-rated is now provided.
  - Previously, only a broad performance-based method was available where filling the void by approved material to retard the passage of fire and hot gases was available.
- Now, the performance can also be measured through compliance as an approved continuity head-of-wall system tested per ASTM E2837.
  - The system will need to provide an F rating/T rating not less than the required fire-resistance rating of the fire barrier in which it is installed.

49

49

707.9, 715.2, 715.6 Continuity of Head-of-Wall Systems

- Additionally, a new definition of *continuity head-of-wall systems* is provided, along with including such systems in the definitions of F Rating and T Rating.
- Although the previous method continues to be acceptable, the new option provides a simpler method for code compliance and enforcement since the materials and installation details are fully described.



50

50

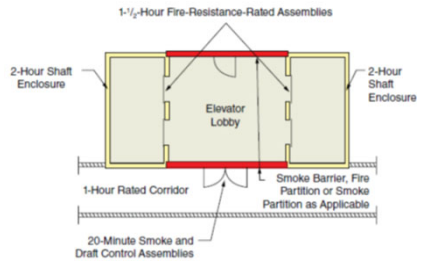
708.4.1, 709.4.2, 710.4.1 Enclosure of Elevator Lobbies

- Wall termination requirements for the three possible elevator lobby enclosure conditions have been clarified for:
  - Fire partition walls
  - Smoke barrier walls
  - Smoke partition walls
- Intent of new and revised provisions is to recognize that fire partition and smoke barrier criteria are not applicable to all elevator lobby walls.
  - Vertical shaft and fire barrier protection is typically adequate.

51

51

708.4.1, 709.4.2, 710.4.1 Enclosure of Elevator Lobbies



52

52

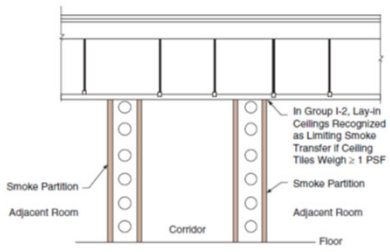
710.4 Continuity of Smoke Partitions

- Lay-in ceiling systems are now considered as "capable of limiting the transfer of smoke" where installed in Group I-2 occupancies, provided:
  - Ceiling tiles weigh a minimum of 1 pound/square foot, and
  - HVAC system is fully ducted per IMC Section 603
- Although a monolithic ceiling is typically considered as the compliant method of construction, such a ceiling type is impractical in hospital and nursing home settings.
  - Main utility and ductwork lines typically run through corridor ceilings to minimize their placement in patient care areas.
- Allowance is consistent with federal standards.

53

53

710.4 Continuity of Smoke Partitions

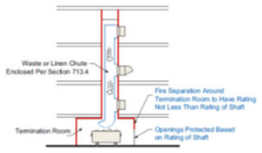


54

54

713.13.4 Chute Discharge Rooms

- Opening protectives for chute discharge rooms need only comply with the minimum fire-protection rating established in Tables 716.1(2) and 716.1(3) based on the required rating of the shaft enclosure.
  - Previously, the opening rating needed to be equal to that of the enclosure.
- As an example, a 2-hour shaft enclosure would have required a 2-hour fire door assembly, rather than the minimum 90-minute assembly assigned by Table 716.1(2).

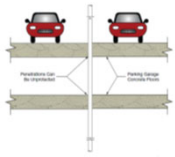


55

55

714.5.1, 714.5.1.2 Through-penetration Firestop Systems

- Penetrations of concrete floors and ramps of parking garages now permitted to be unprotected.
- Consistent with previous allowances for:
  - Unprotected joints — Section 715.3, Exception 3
  - Unprotected vertical openings — Section 712.1.10
- Allowances limited to concrete construction unprotected penetrations do not compromise the fire-resistance rating of the floor.

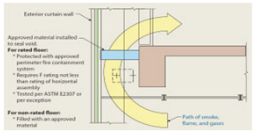


56

56

715.4, 715.5 Exterior Curtain Wall and Floor Intersections

- Voids created at the intersection of exterior curtain wall assemblies and floor or floor/ceiling assemblies are required to be filled or protected to prevent the interior spread of fire
  - Fire-resistance-rated floor or floor/ceiling assemblies: Protected
  - Nonfire-resistance-rated floor or floor/ceiling assemblies: Filled
- Three new exceptions now provided where such voids do not require protection or filling
  - Floors within a single dwelling unit
  - Floors and ramps within parking garages
  - Mezzanine floors



57

57

Copyright 2023 International Code Council

716.2.6.1 Fire Door Closing for Storm Shelters

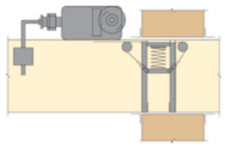
- Fire doors required solely to obtain compliance with the storm shelter requirements of ICC 500 are not required to be self-closing or automatic-closing.
  - Exception mirrors allowance in ICC 500 that allows for elimination of the closing devices.
  - Placement of exception in IBC recognizes hierarchy of code vs. standard application.

58

58

717.2.4.1 Controls Not Permitted to be Installed Through Dampers

- Mechanical, electrical and plumbing controls not to be installed in air duct systems, except for wiring directly associated with air distribution system.
  - Wiring to comply with IMC Section 602 and as short as practicable.
- In addition, such controls not to be installed through fire, smoke, fire/smoke and ceiling dampers unless permitted by manufacturer and listing.
- Concern is to eliminate potential operation of device during fire events.

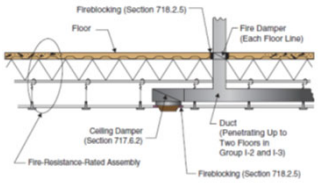


59

59

717.6.1 Through Penetrations forGroup I-2 and I-3 Occupancies

- General limitation on through penetration of ducts where penetrating a horizontal assembly now also applicable to Group I-2 and I-3 occupancies.
  - Permits connection of two stories without shaft enclosure where fire damper installed at floor line or duct protected as a penetration per Section 714.5.
- Consistent with MMS federal certification requirements



60

60

718.2.1 Fireblocking Materials

- Addition complying material for achieving fireblocking in combustible construction now provided.
- One thickness of 19/32-inch fire-retardant-treated wood structural panel now acceptable.
  - Considered by IBC Table 722.6.2(1) as equivalent as ½-inch gypsum board for fire-resistance rating
  - Also consistent with ½-inch gypsum board in regard to flame spread rating of 25 or less
- Recognizes common use of FRT wood, particularly in Type III construction.

61

61

Table 721.1(2) Rated Fire-resistance Periods for Various Walls and Partitions

- Additional listing established in Table 721.1(2) providing compliant prescriptive wall and partition assemblies.
- New Item 16-1.4 for wood-framed exterior wall based on successful testing per ASTM E119.
  - Acceptable for one-hour fire-resistance rating
  - Only applicable as "fire side only" wall per Section 705.5
  - 2 x 6 wood studs @ 16 inches o.c.
  - 5/8-inch Type X gypsum wallboard on interior side
  - R-19 fiberglass insulation installed in stud cavity
  - Exterior covered with 15/32-inch wood structural panels
- Also clarifies that studs in this assembly and eight other existing assemblies can be designed without fire-related capacity reductions.

62

62

Table 721.1(2) Rated Fire-resistance Periods for Various Walls and Partitions

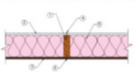
TABLE 721.1(2) Rated Fire-Resistance Periods for Various Walls and Partitions

Portions of table not shown remain unchanged.

Material	Item Number	Construction	Minimum Finished Thickness Face-To-Face 4 Hours	3 Hours	2 Hours	1 Hour
16. Exterior walls rated for fire resistance from the inside only in accordance with Section 705.5.	16-1.4[q]	2" × 6" wood studs at 24" centers with double top plates, single bottom plates; interior side covered with ½" Type X gypsum wallboard, 4' wide, applied vertically with all joints over framing or blocking and fastened with 2½" Type S drywall screws, spaced 7" on center. Joints covered with tape and joint compound. Exterior covered with 15/32" wood structural panels, applied vertically with edges over framing or blocking and fastened with 6d common nails (bright) at 12" on center in the field and 6" on center on panel edges. R-19 fiberglass insulation installed in stud cavity. Rating established from the gypsum covered side only.	—	—	—	6[q][r]

Footnotes a-p remain unchanged and are not shown for brevity.

q. ~~The design stress of studs shall be equal to not more than 100 percent of the allowable F_c calculated in accordance with Section 2306.~~ The studs in this assembly can be designed without fire-related capacity reductions.

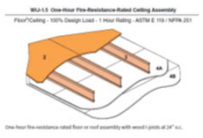


63

63

Table 721.1(3) Minimum Protection for Floor and Roof Systems

- Additional listing established in Table 721.1(3) providing compliant prescriptive floor and roof assemblies.
- New Item 31-1.1 for wood-framed horizontal assembly based on successful testing per ASTM E119.
  - Acceptable for one-hour fire-resistance rating
  - Wood I-joists @ 24 inches o.c.
  - Two layers 1/2-inch Type C gypsum wallboard on ceiling side



64

64

903.2, 903.3.1.1.3 Automatic Sprinkler Protection for Batteries

- Allowance to exempt sprinkler protection for battery areas in telecommunications buildings where automatic smoke detection and fire-resistive separation is provided has been modified to those conditions where such battery areas not required to have sprinkler system per IFC Section 1207.
- Where sprinkler protection required for areas containing lithium-ion or lithium metal batteries, design of system to be based on series of fire tests involving scenarios that address range of variables associated with arrangement of hazards to be protected.
  - Tests to be conducted or witnessed and reported by approved testing laboratory

65

65

903.2 Sprinkler System Required – Lithium-ion and Lithium Metal Batteries

- Sprinkler systems are required in certain Group B, F-1, M and S-1 occupancies where these batteries are involved.
- Not limited to use in Energy Storage Systems as previously done.
- Addresses the unique fire hazard the batteries create and the potential for a thermal runaway fire.
- Sprinkler required for:
  - Group B: Laboratories, testing, research and development of batteries
  - Group F-1: Manufacture of batteries or vehicles, ESS or equipment using them
  - Group M: Storage
  - Group S-1: Storage or repair of vehicles powered by these batteries with fire area over 500 square feet

66

66

Copyright 2023 International Code Council

903.2 Sprinkler System Required – Lithium-ion and Lithium Metal Batteries

Occupancy Classification	Use	Extent of Required Sprinkler Protection
Group B	Laboratories involving research, development or testing of LI or LM batteries	Throughout fire area
Group F-1	Manufacture of LI or LM batteries	Throughout the building
	Manufacture of vehicles, energy storage systems or equipment containing LI or LM batteries where batteries installed as part of manufacturing process	Throughout the building
Group M	Storage of LI or LM batteries by IFC Section 320 or IFC Chapter 32	Within the storage room or space
Group S-1	Storage of LI or LM powered vehicles where fire area > 500 sf	Throughout the building
	Repair garage with storage of LI or LM powered vehicles where fire area > 500 sf	Throughout the building

LI = lithium-ion
LM = lithium metal

67

67

903.2 Sprinkler System Required – Lithium-ion and Lithium Metal Batteries

- A number of other provisions have been added in other sections to better address the hazards of these types of batteries. This includes:
- Sprinkler system design is based upon fire tests to address specific hazard and arrangement. Does not use standard density requirements for the general occupancy area.
- New IFC Sections 320 and 322 which address Battery Storage and Powered Micromobility Devices respectively.
- IFC 322 does not require a sprinkler system but addresses other protection issues for storage, charging, location, planning, etc.

68

68

903.3.1.1.1 Sprinkler System Exempt Locations

- Two of the locations exempt from sprinkler protection have been consolidated into a single exemption.
- Formerly, sprinkler protection was not required for a room or space where:
  - Application of water, or flame and water, constitutes a serious life or fire hazard, or
  - Sprinklers considered undesirable because of nature of contents.
- New consolidated exemption applies for a room or space "where sprinklers constitute a serious life or fire hazard because of the nature of the contents."

69

69

903.3.1.2 NFPA 13R Sprinkler Systems

- Typically increases the height of a Group R-2 occupancy building which can use an NFPA 13R sprinkler system.
- Changes from a 30-foot maximum height to the highest floor level to a maximum 45-foot height to the roof assembly.
- 45-foot height continues to be measured from lowest level of fire department vehicle access, but the upper terminus is now the eave of highest pitched roof, intersection of highest roof and exterior wall, or top of highest parapet, whichever is greatest height.

70

70

903.3.1.2 NFPA 13R Sprinkler Systems

- Residential occupancies other than Group R-2 will continue to use the maximum 30-foot height limitation
- The revised provisions addressing Group R-2 provide greater consistency with the 2018 thresholds for 13R protection
  - Requirements also consistent with provisions addressing protection of attic spaces where a 13R sprinkler system is provided
- 2021 provisions were felt to be too restrictive for Group R-2 occupancies

71

71

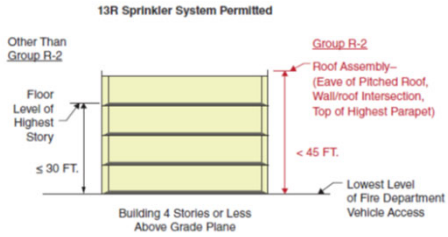
903.3.1.2 NFPA 13R Sprinkler Systems

	2021 IBC All Group R buildings	2024 IBC Group R-2 Apartment Buildings only	2024 IBC All Occupancies other than Group R-2
Maximum Number of Stories	4 above grade plane	4 above grade plane	4 above grade plane
Maximum Height in Feet	30	45	30
Lower Datum Point for Height in Feet Measurement	Lowest level of fire department vehicle access	Lowest level of fire department vehicle access	Lowest level of fire department vehicle access
Upper Datum Point for Height in Feet Measurement	Floor level of highest story	Eave of highest pitched roof, intersection of highest roof and exterior wall, or top of highest parapet, whichever is greatest height	Floor level of highest story
Lower Datum Point for Number of Stories Permitted for Podium Buildings (Sec. 510.2, 510.4)	Grade plane	Grade plane	Grade plane

72

72

903.3.1.2 NFPA 13R Sprinkler Systems



73

73

903.4.2 Sprinkler System Supervision and Alarms

- It has been clarified that exception for limited area sprinkler systems is applicable to electronic supervision requirement for sprinkler systems.
  - Previously applicable to alarm monitoring provisions
- In addition, a visual sprinkler waterflow alarm to be installed on exterior of any building protected by automatic sprinkler system.
  - Waterflow devices only required where flow switch required to be electrically supervised
  - Does not independently require a fire alarm system unless one is already provided within building

74

74

905.3, 905.4 Standpipe Installations

- The required locations where standpipe hose connections are to be located now includes exterior exit stairways.
  - Previously, connections at stairways were only required for interior exit stairways in buildings requiring a Class I standpipe systems.
  - Addresses intended application of requirement to all required exit stairways where applicable.
- In addition, standpipe systems not required in Group R-2 townhouses.

75

75

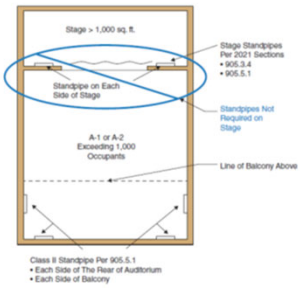
~~905.3.4,~~ 905.5.1 Standpipes for Stages

- Class III standpipe system no longer required on both sides of stages over 1,000 square feet in floor area.
  - Previously, both 1½-inch and 2½-inch connections were required, with an exception allowing for only 1½-inch connections if the building or area is provided with sprinkler protection.
- In addition, the requirement for Class II standpipes on each side of stages in Group A-1 and A-2 occupancies has been deleted.
- Deletions based upon:
  - Such buildings now typically sprinklered throughout
  - Very good fire record for such buildings
  - Current thinking recognizes limitations and hazards with building occupants attempting to fight a fire

76

76

~~905.3.4,~~ 905.5.1 Standpipes for Stages



77

77

907.2.1 Group A Occupancy Fire Alarms

- Manual fire alarm system or EV/AC system no longer required for Group A-5 outdoor bleacher-type seating where occupant load ≥ 300 and < 15,000 occupants, if:
  - Public address system with standby power provided
  - Any enclosed spaces attached or within 5 feet of seating limited to 10% of seating area or 1,000 square feet, whichever is less
  - Spaces under seating areas to be separated from seating area per Section 1030.1.1.1 (minimum 1-hour construction)
  - All means of egress open to outside

78

78

907.2.1 Group A Occupancy Fire Alarms

- Temporary Group A-5 seating facilities also not required to have manual fire alarms system or EV/AC system, if:
  - No enclosed spaces under or attached to bleacher-type seating
  - Seating erected for less than 180 days
  - Evacuation of seating area included in approved fire safety plan
- Both new exceptions provide clarity and remove inconsistent application of requirements.
  - Based on Section 309 of ICC 300 *Standard on Bleachers, Folding and Telescoping Seating and Grandstands*
- Neither pull stations nor occupant notification system required.
- Fire safety plan will require an occupant notification procedure

79

79

907.2 Fire Alarm and Detection Systems

- New sections added to require detection systems in areas containing lithium-ion and lithium metal batteries.
- Similar to 903.2, requirements apply to Group B, F, M and S occupancies
- Requires an alarm system activated by air sampling-type smoke detection or radiant energy-sensing detection.
- Helps to prevent/limit fire or thermal runaway hazard by early detection of battery failures
- Since fires are almost impossible to extinguish, this helps detect problems to allow evacuation, or mitigation efforts prior to fire occurrence.

80

80

907.2 Fire Alarm and Detection Systems

Occupancy Classification	Use	Extent of Required Fire Alarm Protection
Group B	Laboratories involving research, development or testing of LI or LM batteries	Throughout fire area
Group F-1	Manufacture of LI or LM batteries	Throughout the fire area
	Manufacture of vehicles, energy storage systems or equipment containing LI or LM batteries where batteries installed as part of manufacturing process	Throughout the fire area
Group M	Storage of LI or LM batteries by IFC Section 320 or IFC Chapter 32	Throughout the storage room or space
Group S-1	Storage of LI or LM batteries	Throughout the fire area

Fire alarm system to be activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system.

LI = lithium-ion
LM = lithium metal

81

81

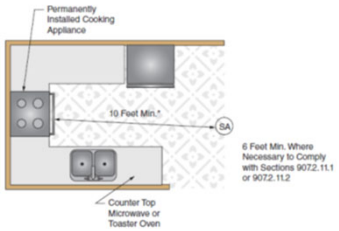
907.2.11.3 Smoke Alarms Near Cooking Appliances

- Modifies the location requirements applicable to smoke alarms due to changes in the listing standard.
- New testing standards help reduce nuisance alarms caused by cooking sources.
  - Align with NFPA 72 and UL 217
- Requires 10-foot horizontal separation to permanently installed cooking appliance, with exception permitting reduction to 6 feet to ensure detectors are installed where required by 907.2.11.1 or 907.2.11.2.
- Code previously used 20 feet, 10 feet or 6 feet, depending on alarm type.

82

82

907.2.11.3 Smoke Alarms Near Cooking Appliances



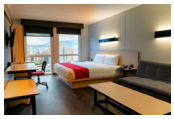
Smoke alarm locations in cooking areas

83

83

907.5.2.1.3 Audible Alarm Signal Frequency

- The requirement that the audible fire alarm activated by the fire alarm system must be a 520-Hz low-frequency signal has been extended to sleeping rooms in Group I-1 occupancies.
  - Previously only required in Groups R-1 and R-2
- Low-frequency signal for smoke alarms only required in those buildings where a fire alarm system is mandated.
- Occupants in Group I-1 occupancies expected to be generally capable of responding to an emergency and evacuating the building on their own or with limited assistance.



84

84

907.5.2.1.3 Audible Alarm Signal Frequency

- Low frequency signals have been shown to improve the waking effectiveness for several high-risk groups, including:
  - Individuals who are over 65 who are hard of hearing
  - School-age children
  - People who are alcohol impaired
- As there are currently very few smoke alarms capable of providing the low-frequency signal, particularly in back-up mode, other methods include:
  - Fire alarm system horns and horn/strobes
  - Smoke detectors w/integral sounder bases
  - Speakers connected to an EVAC system

85

85

915 Carbon Monoxide Detection

- Detection now required in all normally occupied occupancies where a carbon monoxide producing device is present.
- Previously was only required in Group I-1, I-2, I-4 and R occupancies and in classrooms of Group E occupancies.
- An exception exempts detection requirement in F, S and U occupancies that are not normally occupied.
- Requirements have also been substantially revised and reformatted.
- Relies on definition in Chapter 2 which helps limit scope to permanent CO sources or regularly used vehicles (vehicles in garage, propane forklifts, etc.) and not temporary or infrequent sources.

86

86

915 Carbon Monoxide Detection

- Reformatting helps clarify requirements and how each aspect is applied.
  - 915.1 addresses where CO detection is needed
  - 915.2 specifies where detection devices are placed for best protection
  - 915.3 through 915.5 deals with installation itself, including compliance with NFPA 72, detectors being hardwired, and interconnection
- System requirements depend on other features in the building. Can be stand-alone if no fire alarm system is present, done as part of a fire alarm system by adding detectors, or as a part of a security system that the occupant may already have (when done per NFPA 72).

87

87

Copyright 2023 International Code Council

Part 4

Means of Egress

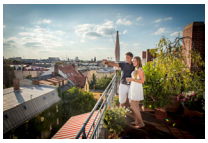
- Chapter 10 Means of Egress

88

88

1006.3.3, Table 1006.3.3 Egress from Stories and Occupiable Roofs

- New definition added to Chapter 2 for Occupiable Roof
- Roof is designed for human occupancy and access is for other than maintenance or repair
- Revisions throughout code from “occupied roof” to “occupiable roof” which will provide better consistency when applying provisions
- Egress is required from “occupiable roof” whether it is occupied or not



89

89

1006.3.3, Table 1006.3.3 Egress from Stories and Occupiable Roofs

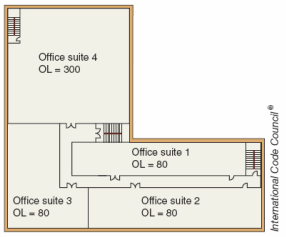
- Language modified to clarify that occupants to be provided with options for egress from upper stories by requiring access to minimum number of required exits for both their location and occupant load served.
- On upper stories, occupants from any space must have access to the minimum required number of exits for the story or occupiable roof.
  - However, access to all exits from the story or occupiable roof may not necessarily be required.

90

90

Copyright 2023 International Code Council

1006.3.3, Table 1006.3.3 Egress from Stories and Occupiable Roofs



Exits serving specific spaces or areas

91

91

Tables 1006.3.4(2) and 1006.3.4(2) Egress from Stories and Occupiable Roofs

- Thresholds for allowance of a single means of egress from an occupiable roof have been established
- For Group R-2 apartment buildings, single exit or access to single exit permitted from occupiable roof over first or second story above grade plane
  - Limited to roofs accessed through and serving individual dwelling unit
- For all other occupancies, single exit or access to single exit permitted from occupiable roof over first story above grade plane

92

92

Tables 1006.3.4(2) and 1006.3.4(2) Egress from Stories and Occupiable Roofs

TABLE 1006.3.4(1) Stories and Occupiable Roofs With One Exit or Access to One Exit for R-2 Occupancies

Story or Occupiable Roof	Occupancy	Maximum Number of Dwelling Units	Maximum Exit Access Travel Distance
Basement, first, second or third story above grade plane and occupiable roofs over the first or second story above grade plane	R-2[a,b,c]	4 dwelling units	125 feet
Fourth story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.
NP = Not Permitted.
NA = Not Applicable.
a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.
b. This table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).
c. This table is for occupiable roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupiable roofs that are not access through and serving individual units, use Table 1006.3.4(2).

93

93

Tables 1006.3.4(2) and 1006.3.4(2) Egress from Stories and Occupiable Roofs

TABLE 1006.3.4(2) Stories and Occupiable Roofs With One Exit or Access to One Exit for Other Occupancies

Story and Occupiable Roofs	Occupancy	Maximum Occupant Load Per Story and Occupiable Roof	Maximum Exit Access Travel Distance (Feet)
First story above or below grade plane and occupiable roofs over the first story above grade plane	A, B[b], E, F[b], M, U	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R- 1, R-2[a,c]	10	75
	S[b,d]	29	75
Second story above grade plane	B, F, M, S[d]	29	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.
NP = Not Permitted.
NA = Not Applicable.
a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.
b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an occupiable roof of such buildings shall have a maximum exit access travel distance of 100 feet.
c. This table is used for R-2 occupancies consisting of sleeping units. For R-2 occupancies consisting of dwelling units, use Table 1006.3.4(1).
d. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet.

94

94

1008 Means of Egress Illumination

- Means of egress illumination no longer required in self-storage units where:
  - Units do not exceed 400 square feet in floor area, and
  - Units are accessed directly from exterior of building.
- Allowance recognizes:
  - Lack of electrical power/lighting in units to reduce hazards and discourage use for non-storage purposes
  - Applicable where size does not exceed that of a typical two-vehicle garage
  - Opening directly to exterior provides for familiar means of egress
- Section 1008 also reorganized to separate provisions for general means of egress illumination from those addressing emergency or back-up illumination.

95

95

1009.2.1 Elevator Required for Accessible Means of Egress

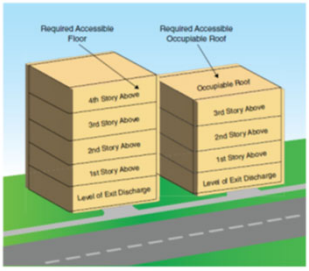
- Scoping provisions clarified for accessible means of egress for an occupiable roof.
- As a general rule, required accessible means of egress to include a complying elevator where an accessible occupiable roof is located above a story that is three or more stories above level of exit discharge.
  - Consistent with consideration of occupiable roof as a floor level for accessible means of egress purposes.

96

96

Copyright 2023 International Code Council

1009.2.1 Elevator Required for Accessible Means of Egress



Accessible Elevator Required in Both Buildings

97

97

1009.2.2 Maneuvering Clearances at Accessible Means of Egress Doors

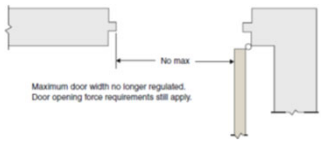
- Required maneuvering clearances at doorways along routes serving as accessible means of egress, including stairways, have been clarified.
- Where doors are part of an accessible route to provide access to an exit, area of refuge or exterior area of assisted rescue:
  - Maneuvering clearances to be provided at such doors in direction of egress.
- Where doors lead to an area of refuge or exterior area for assisted rescue and reentry to the floor is possible:
  - Door maneuvering clearances to be provided on both sides of door.
- Maneuvering clearances not required at doors to exit stairways for levels above and below exit discharge level where exit enclosure does not include an area of refuge.

98

98

1010.1.1, 1010.4 Size of Doors

- Miscellaneous specific allowances for unlimited swinging door leaf width have been removed due to redundancy/conflict with 2021 maximum leaf width deletion.
- Minimum door width of doors serving shower compartments now regulated by IPC.
  - Minimum of 22 inches clear with for nonaccessible condition, an increase from previous 20 inches.



99

99

1010.2.4, ~~1010.2.5~~ Locks and Latches

- Adds four definitions (automatic flush bolt, constant latching bolt, dead bolt, and manual bolt)
- Reformats provisions and provides a table to clarify which type of latching bolt is permitted in various applications.
- Modifies existing "main door" exception to clarify it as being the main door into the building or tenant space and excludes secondary doors.
- Eliminates the occupant load limit of 10 for dwelling units or sleeping units to use night latch, dead bolt or security chain.
  - Now permitted for units permitted a single means of egress.

100

100

1010.2.4, #4 Locks and Latches

TABLE 1010.2.4: Manual Bolts, Automatic Flush Bolts and Constant Latching Bolts on the Inactive Leaf of a Pair of Doors

Application With a Pair of Doors With an Active Leaf and Inactive Leaf	The Pair of Doors Are Required to Comply With Section 716	Permitted Uses of Manual Bolts, Automatic Flush Bolts, and Constant Latching Bolts on the Inactive Leaf of a Pair of Doors.		
		Surface or flush mounted manual bolts	Automatic flush bolts	Constant latching bolts
Group B, F, or S occupancies with occupant load less than 50.	No	P	P	P
	Yes	NP	NP[a]	P
Group B,F, or S occupancies where the building is equipped with automatic sprinkler system in accordance with Section 903.3.1.1 and the inactive leaf is not needed to meet egress capacity requirements.	No	P	P	P
	Yes	NP	NP[a]	P
Group I-2 patient care and sleeping rooms where inactive leaf is not needed to meet egress capacity requirements.	No	NP	NP[a]	P
	Yes	NP	NP[a]	P
Any occupancy where panic hardware is not required, egress doors are used in pairs, and where both leaves are required to meet egress capacity requirements.	No	NP	P	NP
	Yes	NP	NP[a]	NP
Storage or equipment rooms where the inactive leaf is not needed to meet egress capacity requirements.	No	P[a]	P	P
	Yes	P[a]	P	P

P – Permitted, NP – Not permitted.

a. Not permitted on corridor doors in Group I-2 occupancies where corridor doors are required to be positive latching.

b. Permitted where both doors are self-closing or automatic-closing, and are provided with a coordinator that causes the inactive leaf to be closed prior to the active leaf.

101

101

1010.2.6 Stairway Doors

- Exception 3 allowing stairway exit doors to be locked from the side opposite the egress side has been clarified and expanded.
- Such doors to be openable from egress side and capable of being unlocked simultaneously without unlatching when any one of three conditions occur:
  - Unlocked individually or simultaneously upon signal from fire command center or single location inside building's main entrance.
  - Upon activation of fire alarm signal when such system present in an area served by stairway.
  - Upon failure of power supply to electric lock or locking system.

102

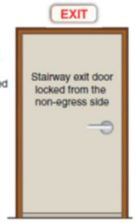
102

Copyright 2023 International Code Council

1010.2.6 Stairway Doors

Must be openable from the egress side and capable of being unlocked simultaneously without unlatching upon:

- Fire command center or emergency personnel signal
- Fire alarm signal activation if present in an area served by the stairway
- Power failure to the electric lock or locking system



Exit door to interior exit stairway

103

103

1010.2.9 Access Control Door Locking Systems

- Where door has an access control system (ingress control), provisions now indicate:
  - That such systems are permitted, and
  - They must comply with either special locking arrangements set forth below or follow the general egress rules and be readily openable from the egress side:
    - Hardware release of electrically locked egress doors
    - Sensor release of electrically locked egress doors
    - Delayed egress
    - Controlled egress doors in Groups I-1 and I-2
    - Elevator lobby exit access doors
    - Locking arrangements in buildings with correctional facilities

104

104

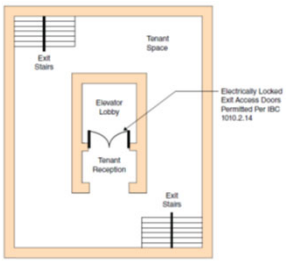
1010.2.14 Elevator Lobby Exit Access Doors

- Permits electronically locked exit access doors to serve as the means of egress from an elevator lobby.
- Eliminates the need for an elevator lobby to have direct access to an exit and allow the egress path to go through a tenant space which could normally be locked and unavailable.
- Requires eight conditions to be met, including:
  - NFPA 13 sprinkler system
  - Fire alarm system
  - Smoke detection system in lobby
  - Other occupants of floor to have access to two exits without travel through lobby
  - Two-way communication system within the lobby

105

105

1010.2.14 Elevator Lobby Exit Access Doors



106

106

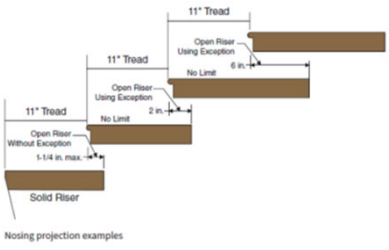
1011.5.5.1 Nosing Projection Size and Uniformity

- Nosing projection limitation of 1¼ inches beyond tread below no longer applicable when solid risers not required.
- Exception will allow tread depth to be extended beneath adjacent tread without any limitation on extension.
  - Does not impact minimum usable tread depth because typical 11-inch dimension must be measured from the front of the adjacent nosings.

107

107

1011.5.5.1 Nosing Projection Size and Uniformity



Nosing projection examples

108

108

1013.2 Low-level Exit Signs in Group R-1

- New exception eliminates the requirement for low-level exit signs in areas serving the guestrooms of Group R-1 occupancies when the building is sprinklered.
  - The exception will required either an NFPA 13 or 13R system throughout the building.
- Low-level exit signs would still be required in older buildings which are not sprinklered and may lack many other current safety features.
- These additional exit signs were not felt to be justified based on many improvements in the fire safety record of R-1 occupancies. This includes compartmentation, sprinklers, alarms and loss history.

109

109

1013.5.1 Photoluminescent Exit Signs

- Specific language now serves as a reminder that photoluminescent exit signs must be provided with an adequate charging source as established.
- Regulated by UL 924, photoluminescent exit signs to be provided with minimum of 5 foot-candles of illumination when building is occupied.
  - Ensures signs are adequately charged when needed.
- Amount of illumination and duration needed to charge photoluminescent material varies based on manufacturer and product.
  - Determination can only be made by testing.

110

110

1014.3 Lateral Location of Handrails

- Handrails to be located 6 inches or less horizontally from edge of walking surface of stairways, ramps, stepped aisles and ramped aisles.
  - Location limitation will increase reach access for various-sized users as well as increase support and usability of rail.

111

111

1014.7, 1014.8 Handrail Extensions and Clearance

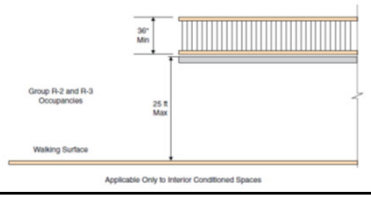
- Clarifications have been made to measurement methods for handrail extension length, including at:
  - Top landing nosing rather than at top riser
  - Bottom tread nosing rather than at bottom riser
- Required minimum length before change in direction or decrease in required clearance also clarified.
- Two new exceptions to requirement of required 1½-inch clearance between handrail and wall reflects current practice and allows for:
  - Decreased clearance due to curvature or angle of handrail return
  - Maximum ½-inch-thick mounting flanges at ends of handrails

112

112

1015.3 Guard Height Within Dwelling Units

- Minimum guard height in Group R-2 and R-3 occupancies now permitted to be reduced to 36 inches under specified conditions:
  - Open-side of walking surface not more that 25 feet above floor or walking surface below
  - Limited to areas within interior conditioned space of individual dwelling units
- Allowance available to buildings of any height.



113

113

1015.8 Window Openings in Group R-2 and R-3 Buildings

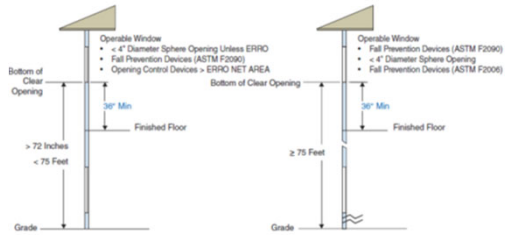
- Scope of Section 1015.8 is windows in Group R-2 and R-3 buildings including dwelling units where:
  - Bottom of clear opening of operable window located less than 36 inches above finished floor and more than 72 inches above finished grade or other surface below on exterior of building.
- Provisions reorganized to regulate two conditions:
  - Windows located less than 75 feet but more than 6 feet above exterior grade or surface below
  - Window openings located 75 feet or more above exterior grade or surface below

114

114

Copyright 2023 International Code Council

1015.8 Window Openings in Group R-2 and R-3 Buildings

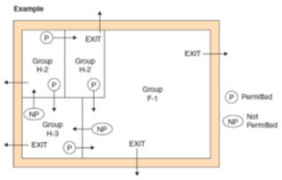


115

115

1016.2, #3 Egress Through Intervening Spaces

- Where travel through intervening rooms includes one or more Group H occupancies, limitations on travel have been clarified.
- Egress travel from a room or space classified as a Group H occupancy permitted through an adjoining or intervening room of same or lesser hazard.



116

116

1017.2.3 Group H-5 Exit Access Travel Distance Increase

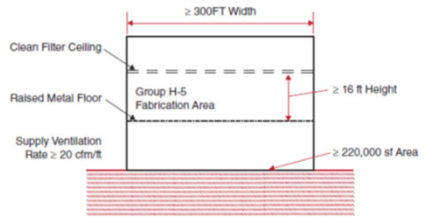
- Exit access travel distance in the fabrication areas of a Group H-5 occupancy has been increased from 200 feet to 300 feet maximum.
- Multiple conditions must be met to receive increase:
  - Width of fabrication area to be 300 feet or greater
  - Floor area of fabrication area to be 220,000 sf or greater
  - Height of fabrication area to be 16 feet or greater
    - Measured between raised metal floor a clean filter ceiling
  - Supply ventilation rate to be 20 cfm/sf or greater
    - Ventilation to remain operational
- Fire Dynamic Simulator and Pathfinder models used to calculate required safe egress times.

117

117

Copyright 2023 International Code Council

1017.2.3 Group H-5 Exit Access Travel Distance Increase



118

118

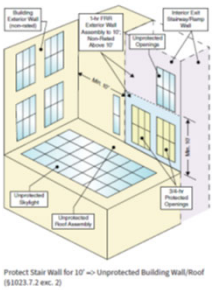
1023.7 Interior Exit Stairway Exterior Wall/Roof Protection

- Provisions now address where interior exit stairway extends above adjacent roof of same building.
  - Requirements similar to those where exterior exit stairway walls and openings exposed by other parts of building at angle of less than 180 degrees.
- Protection must occur at either the:
  - Adjacent roof assembly, with a minimum 1-hour fire-resistance rating and ¾-hour opening protectives, extending horizontally a minimum of 10 feet from exterior wall of the stairway or to perimeter of adjacent roof, whichever is less, or
  - Exterior wall of stairway has minimum 1-hour fire-resistance rating and ¾-hour opening protectives, extending a minimum of 10 feet above the roof.
- No roof assembly protection required where adjacent to penthouse of stairway.

119

119

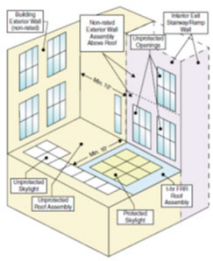
1023.7 Interior Exit Stairway Exterior Wall/Roof Protection



120

120

1023.7 Interior Exit Stairway Exterior Wall/Roof Protection



Protect Roof for 10' => Unprotected Stair Wall (§1023.7.2)

Exterior wall and roof protection for interior exit stairways

121

121

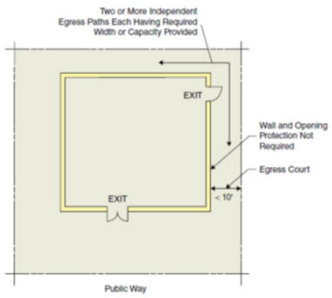
1029.3 Wall and Opening Protection at Egress Courts

- New exception eliminates the egress court requirements for a fire-resistance-rated wall and protected openings when the occupants have multiple egress path options.
- With options, it is unlikely that both egress paths would be blocked.
- Conceptually similar to existing exception permitted for egress balconies in Section 1021.2.
- Walls with limited fire separation distance would still require protection based on those requirements, but not necessarily based on the egress court protection requirement.

122

122

1029.3 Wall and Opening Protection at Egress Courts



123

123

1030.9.5 Dead-End Aisles in Assembly Spaces

- Previous exception allowing for dead-end aisles exceeding 16 rows in assembly seating areas has been revised to coordinate with general allowance of 20 feet.
  - Dead-end aisles longer than 20 feet now permitted where complying travel using aisle accessways to another aisle is provided.
- New exception allows for dead-end aisles serving no more than 49 occupants if in compliance with Section 1030.8.
  - Allowance for extended dead-end condition based on general egress concept based on limited occupant load and common path of egress travel.

124

124

Part 5

- Accessibility
  - Chapter 11 Accessibility

125

125

1103.2.1, 1108.6.3 Residential Group R-1 and R-3 Accessible and Type B Units

- General exemption for small Group R-3 owner-occupied transient living facilities has been added.
  - Previously specific only to Group R-1 facilities
- Provisions also added for when non-exempt Accessible and Type B units are required in Group R-3 occupancies.
- Clarifies that residence of proprietor not required to be an Accessible unit or counted towards total number of units.

126

126

1105.1.1 Power-operated Doors at Public Entrances

- Power-operated door requirements have been clarified for public entrances with multiple doors, tenant entrances and mixed-occupancy buildings.
- In facilities with occupant loads exceeding those required by Table 1105.1.1 for occupancies indicated:
  - Each public entrance required to be accessible have a minimum of one power-operated or low-energy power-operated door.
  - Where doors in a series such as a vestibule, at least one set of two doors in series must comply.
- Tenant space with its own exterior public entrance to be considered a separate facility.

127

127

1105.1.1 Power-operated Doors at Public Entrances

- Requirements not applicable to mixed-occupancy facilities where total building occupant load for listed occupancies is calculated such that:
  - $AOLO_1/BOLO + AOLO_2/BOLO \ldots < 1.0$

Where: $AOLO_1$ = Actual occupant load of occupancy 1
$AOLO_2$ = Actual occupant load of occupancy 2
BOLO = Building occupant load threshold of each occupancy per Table 1105.1.1

TABLE 1105.1.1 Public Entrance With Power-Operated Doors

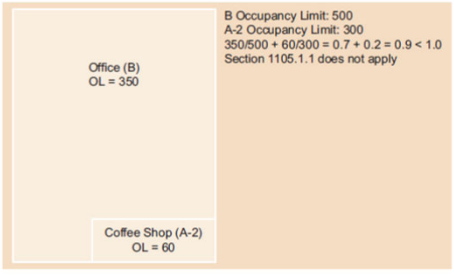
Occupancy	Building Occupant Load Greater Than
A-1, A-2, A-3, A-4	300
B, M, R-1	500

~~a. In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.~~

128

128

1105.1.1 Power-operated Doors at Public Entrances



129

129

1106.3, 1106.7.1 Accessible Parking for Groups R-2, R-3 and R-4

- Clarifies that accessible parking requirements for Group R-2, R-3 and R-4 occupancies to be based on "the greatest number" of either the 2% requirement or at least one space for each Accessible and Type A unit.
- Code previously was not clear how to apply these two provisions so often was interpreted as providing a choice to use one or the other.

130

130

1106.3, 1106.7.1 Accessible Parking for Groups R-2, R-3 and R-4

- Group I-1 and R-1 (previous Item 2) removed from this section since they must provide accessible parking per Table 1106.2.
- Previous item 4 moved to location requirements of 1106.7.1. This expands the application to ***all occupancies*** and requires accessible parking be provided beneath the building if any parking is provided beneath the building.

131

131

1107.2 Electrical Vehicle Charging Stations

- Electrical vehicle charging stations serving Group R-2 occupancies must now comply with accessible provisions of Section 1107.2.
  - Exemption continues to apply to Groups R-3 and R-4
- Electrical vehicle charging stations not required to be accessible where used exclusively by:
  - Buses
  - Trucks
  - Other deliver vehicles
  - Law enforcement vehicles
  - Motor pools

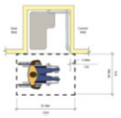
132

132

Copyright 2023 International Code Council

1108.6.1.1 Bathtub and Showers in Group R-1 Accessible Units

- New exception permits more limited bathing options where none of the Accessible units in the building contain bathtubs.
- Where NONE of the units within the building contain tubs, standard or alternate roll-in showers with seats are permitted.
- Maintains concept that people with disabilities should be treated the same as other occupants.
- A second exception allows transfer showers to be substituted for all but the minimum number of roll-in showers from Table 1108.6.1.1



133

133

1108.6.2.2.1 Showers for Type A Units

- Where multiple Type A units required in Group R-2 facility, new requirement ensures that some units provide a shower as a bathing option.
- Where two or more Type A units provided, minimum of 5% , but not less than one Type A unit, to include a bathroom with an accessible shower.

134

134

1110.4 Adult Changing Stations

- New provisions will require adult changing stations (or regulate them if they are provided)
- They are required for:
  - Assembly and mercantile with aggregate of 6 or more male and female required water closets
  - Group B education facilities with aggregate of 12 or more male and female required water closets
  - Group E with an assembly room or space that requires an aggregate of 6 or more male and female water closets for that room
  - At highway rest stops and highway service plazas

135

135

Copyright 2023 International Code Council

1110.4 Adult Changing Stations

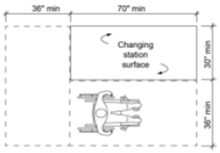
- Required to be located in a single occupant toilet room or in a family or assisted use toilet room
- Are prohibited from requiring travel through a security checkpoint from the general separate-sex toilet and bathing rooms
- Located on accessible route within two stories and a maximum of 2,000 feet of travel
- The water closet and lavatory within the room can be included to satisfy the occupancy's overall fixture requirements

136

136

1110.4 Adult Changing Stations

- ICC A117.1-2017 Supplement 1 available as pathway to technical compliance with accessible adult changing station requirements in 2024 IBC
  - ANSI approval pending
- Supplement 1 addresses three general issues:
  - Installation location
  - Room configuration
  - Changing surface



137

137

1110.6 Accessible Laundry Equipment

- Requirements for accessible laundry equipment relocated from appendix into body of IBC.
- Where three or fewer washing machines provided, at least one to be accessible.
  - Where four or more washing machines provided, at least two to be accessible.
- Where three or fewer clothes dryers provided, at least one to be accessible.
  - Where four or more clothes dryers provided, at least two to be accessible.
- Applicable to laundry equipment provided in public or common-use areas, including laundromats and shared laundry rooms in dormitories and apartment buildings.

138

138

Copyright 2023 International Code Council

1110.6 Accessible Laundry Equipment

- Technical requirements located in ICC A117.1-2017 standard, Section 611:
  - Clear floor space Section 611.2
  - Operable parts Section 611.3
  - Height Section 611.4

139

139

1112.6 Tactile Room Identification Signs

- Provisions for tactile signage for interior and exterior signs identifying permanent rooms and spaces moved from Appendix Section E107.2.
  - Technical requirements for signage found in A117.1-17 Section 703
- Insertion into Chapter 11 results in no requirement for specific adoption
- Also clarifies that tactile signage only required "where provided"

140

140

Part 6

Building Envelope and Construction Materials

- Chapter 12 Interior Environment
- Chapter 14 Exterior Walls
- Chapter 15 Roof Assemblies and Rooftop Structures
- Chapter 16 Structural Design
- Chapter 17 Special Inspections and Tests
- Chapter 18 Soils and Foundations
- Chapter 24 Glass and Glazing

141

141

1202.3 Unvented Attic and Enclosed Rafter Assemblies

- Minimum amount of insulation for condensation control in unvented attic and enclosed rafter spaces now set as a percentage of standard insulation requirement instead of a minimum *R*-value.

TABLE 1202.3 Insulation for Condensation Control

Climate Zonew	Minimum *R*-Value of Air-Impermeable Insulation[a]
2B and 3B tile roof only	0 (none required)
1, 2A, 2B, 3A, 3B, 3C	~~R-5~~ 10%
4C	~~R-10~~ 20%
4A, 4B	~~R-15~~ 30%
5	~~R-20~~ 40%
6	~~R-25~~ 50%
7	~~R-30~~ 60%
8	~~R-35~~ 70%

a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in Section C402.2.1 of the *International Energy Conservation Code*.

142

142

1202.3 Unvented Attic and Enclosed Rafter Assemblies

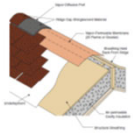
- Where both air-impermeable and air-permeable insulation is installed, intent is to maintain a minimum surface temperature at interface between impermeable and permeable insulation to avoid condensation that may occur in high *R*-value assemblies.
- Revised Table 1202.3 expresses required R-value of air-impermeable insulation as percentage of assembly's original *R*-value rather than absolute values.

143

143

1202.3 Unvented Attic and Enclosed Rafter Assemblies

- Additional revision to vapor diffusion port option that is permitted in Climate Zones 1, 2 and 3.
- Intent of this option introduced in 2021 IBC was to double ventilation rate for these air and vapor permeable insulations from basic 1/300 ratio and thus improve ventilation.
  - However, value mistakenly set at 1/600.
- Modification resets port area ratio at 1/150 to reflect increase in required ventilation rate from 2021 IBC.



144

144

1208 Dwelling Unit Size

- Minimum size of 70 square feet has been established for sleeping units.
  - Previously unaddressed, now consistent with minimum size required for habitable rooms of a dwelling unit.
- Dwelling units now required to have a minimum of 190 square feet of habitable space.
  - Provides consistency with minimum size required for efficiency dwelling units.

145

145

1211.1 UV Germicidal Irradiation Systems

- New standard referenced for UV light systems used for sanitation and germicidal purposes.
- UL 8802 2020, *Outline of Investigation for Germicidal Systems*, now referenced where such systems are provided.
  - Applicable to such systems intend to expose surfaces within unoccupied area with UV energy where exposure dose would otherwise pose risk of injury to occupants.
- Addresses fixed equipment operated in non-residential locations

146

146

1402.8 Vertical and Lateral Flame Propagation Compliance Methods

- Three compliance methods now provided for those exterior wall assemblies that must be tested per NFPA 285, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components*:
  - Exterior wall assembly tested in accordance with, and meeting acceptance criteria of, NFPA 285, or
  - Exterior wall assembly design listed by an approved agency for compliance with NFPA 285, or
  - Approved analysis based on assembly or condition tested with, and meeting acceptance criteria of, NFPA 285

147

147

Copyright 2023 International Code Council

1403.13, 1403.14, 1404.19 Exterior Wall Materials and Installation

- Two additional types of materials now approved for exterior wall construction when meeting Section 1403.
- Fiber-mat reinforced cementitious backer units
  - Permitted as an exterior substrate for application of exterior finish materials when in compliance with ASTM C1325.
  - Installation regulated by new Section 1404.19.

TABLE 1404. Minimum Thickness Of Weather Coverings

Covering Type	Minimum Thickness (inches)
Fiber-mat reinforced cementitious backer units	0.5

- Insulated vinyl siding
  - Permitted as siding material when conforming to ASTM D7793
  - Newly defined as: Continuous insulation cladding product, with manufacturer-installed foam plastic insulating material as an integral part of cladding product with thermal resistance not less than R-2.

148

148

1404.3 Vapor Retarders

- Several revisions made to vapor retarder provisions for consistency with IECC and IRC.
- Changes provide for additional options and better guidance for allowable types and locations of permitted vapor retarders, including:
  - In Climate Zones 4 through 8, vapor retarder not required on interior side of frame walls where assembly complies with Table 1404.3(5).

TABLE 1404.3(5) Continuous Insulation on Walls Without a Class I, II, or III Interior Vapor Retarder

Climate Zone	Permitted Conditions[b,c]
4	Continuous insulation with R-value ≥ 4.5
5	Continuous insulation with R-value ≥ 6.5
6	Continuous insulation with R-value ≥ 8.5
7	Continuous insulation with R-value ≥ 11.5
8	Continuous insulation with R-value ≥ 14

149

149

1409 Insulated Metal Panels (IMP)

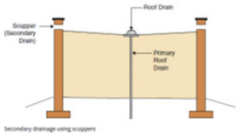
- New provisions now regulate the materials, construction and quality of insulated wall panels (IMP) used as exterior walls and exterior wall coverings.
- IMP newly defined a *a factory manufactured panel consisting of metal facings and an insulation core intended for use as a system forming an exterior wall, an exterior wall covering, a roof covering or roof assembly of a building*.
- Provisions vary based upon whether insulating materials are combustible or noncombustible.
- Although regulated similar to MCMs, they need their own provisions due to variety of insulating materials that are permitted.

150

150

1502.3 Roof Drainage Scuppers

- Scupper requirements for secondary roof drainage removed from IBC as they are addressed in full by IPC.
  - Previously, IBC was incomplete as it did not contain all applicable provisions set forth in IPC.
- Retention of Section 1502.2 maintains requirement for secondary roof drains or scuppers, where applicable, with reference to required compliance with Chapter 11 of IPC.
  - Does not require specific adoption of IPC due to application of Section 102.4 recognizing referenced standards as an extension of the IBC.



151

151

1504.8 Wind Resistance of Aggregate-Surfaced Roofs

- The use of parapets to address the wind-resistance of aggregate-surfaced roofs has been clarified.
- Required parapets need not be provided where adjacent wall extends above roof to height at least equivalent to that required for parapet.
- For roofs with differing surface elevations, minimum parapet height to be based on each roof surface elevation.
- Parapet height to be measured vertically from top surface of coping down to surface of roof covering adjacent to parapet and outbound of any cant strip.
- Section 1504.8 not applicable to complying ballasted single-ply roof coverings.

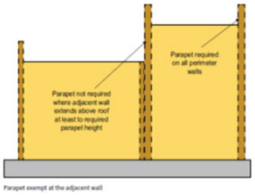
152

152

1504.8 Wind Resistance of Aggregate-Surfaced Roofs

TABLE 1504.8 Minimum Required Parapet Height (Inches) for Aggregate Surfaced Roofs [a,b,c,d,e]

Aggregate Size	Mean Roof Height (ft)	Wind Exposure And Basic Design Wind Speed, V (Mph)														
		Exposure B							Exposure C [d,f]							
		≤95	100	105	110	115	120	130	140	150	≤95	100	105	110	115	120	130	140	150



153

153

1507.8.1, 1507.9.1 Roof Deck Requirements for Wood Shingles and Shakes

- Where wood shakes or shingles installed on spaced sheathing and exposed to an attic area, attic must be ventilated per Section 1202.2.
- Shingles shall not be backed with materials that will occupy required air gap space and prevent free movement of air on interior side of spaced sheathing.

154

154

1512.1, 1512.2 Reroofing

- During reroofing process, susceptible bays to now be analyzed for ponding instability.
- Intent is to reduce likelihood that inadequate drainage and ponding caused by new loading or roofing configurations that might lead to roof collapse or failure.

155

155

Table 1604.5 Risk Categories—Group I-2 and I-3 Occupancies

- All Group I-2 occupancies, and most Group I-3 occupancies, have been relocated to Risk Category IV.
- Public utility facilities have also been designated as RC IV.
  - Includes power generation, potable water treatment and wastewater treatment.
- A Risk Category IV designation is a common approach to provided functional facilities soon after an extreme event.

TABLE 1604.5 Risk Category of Buildings and Other Structures

(only new or modified sections shown for brevity)

Risk Category	Nature of Occupancy
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: ~~Group I-2, Condition 1 occupancies with 50 or more care recipients.~~ ~~Group I-2, Condition 2 occupancies not having emergency surgery or emergency treatment facilities.~~ Group I-3, Condition 1 occupancies.
IV	Buildings and other structures designated as essential facilities and buildings where loss of function represents a substantial hazard to occupants, including but not limited to: Group I-2 occupancies, ~~Condition 2 occupancies having emergency surgery or emergency treatment facilities~~. Group I-3 occupancies other than Condition 1. Public utility facilities providing power generation, potable water treatment, or wastewater treatment.

156

156

1705.2.6 Special Inspection—Metal Building Systems

- New special inspection requirement complement new provisions applicable to metal building systems now found in IBC Section 2214.
- Metal building systems are typically heavily dependent on bracing components to function per the design.
  - Due to a previous lack of special inspection requirements for these components, inspection of the completed installation of these critical components was often overlooked
  - While individual components are often covered by fabricator special inspections and tests, metal building systems are often unique
- Approved agency to perform inspections of erected metal building system to verify compliance with approved construction documents.

157

157

1705.2.6 Special Inspection—Metal Building Systems

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

158

158

Table 1705.3 Special Inspection—Reinforcing Bar Welding

- Continuous special inspection provisions for welding of reinforcing steel in concrete construction have been coordinated with ACI 318.
  - Reinforcement
    - Special moment frames
    - Boundary elements of special structural walls
    - Coupling beams
  - Reinforcement splices
  - Primary tension reinforcement in corbels

159

159

Table 1705.3 Special Inspection—Reinforcing Bar Welding

TABLE 1705.3 Required Special Inspections and Tests of Concrete Construction

Type	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard[a]	IBC Reference
2. Reinforcing bar welding:				–
a. Verify weldability of reinforcing bars other than ASTM A706;	–	X	AWS D1.4 ACI 318: 26.6.4 26.13.1.4	
b. Inspect welding of reinforcement for special moment frames, boundary elements of special structural walls, and coupling beams.	X	=	AWS D1.4 ACI 318: 26.13.3	
c. Inspect welded reinforcement splices;	X	=	=	
d. Inspect welding of primary tension reinforcement in corbels;	X	=	=	
e. Inspect single-pass fillet welds, maximum $^5/_{16}$"; and	–	X	AWS D1.4 ACI 318: 26.13.3	
f. Inspect all other welds.	X =	X	AWS D1.4 ACI 318: 26.13.3	

160

160

1807.2.5 Guards on Retaining Walls

- Guards shall now be provide at retaining walls where hazardous conditions exist similar to those addressed in Section 1015.
  - Exception indicates such guards not required at retaining walls not accessible to public.
- Provisions address where required, minimum height and opening limitations as established in Section 1015.

161

161

2406.1 Multi-pane Glazed Assemblies

- It has been clarified that every pane in multi-pane glass assemblies be safety glazing where located in hazardous locations as identified in Section 2406.4.
  - For example, clarifies that center panes in a multi-pane assembly must also comply as safety glazing.

162

162

Copyright 2023 International Code Council

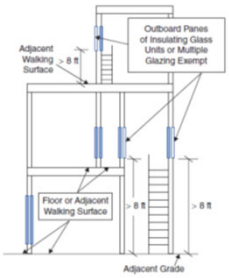
2406.4.3 Safety Glazing in Windows

- It has been clarified that window safety glazing required where person could fall through window, either:
  - Out of a building
  - Inside the building
  - Into the building
- Exception 3 has been revised to exempt outboard panes in insulating glass units or multiple glazing where bottom exposed edge 8 feet or more above any grade or walking surface adjacent to the glass exterior.

163

163

2406.4.3 Safety Glazing in Windows



164

164

Part 7

- Building Services, Special Devices and Special Conditions
  - Chapter 29 Plumbing Systems
  - Chapter 30 Elevators and Conveying Systems
  - Chapter 31 Special Construction

165

165

Copyright 2023 International Code Council

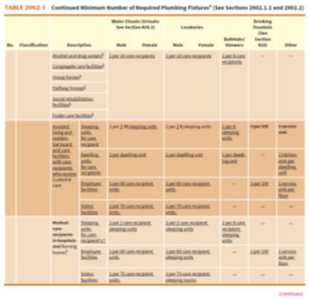
Table 2902.1 Minimum Number of Fixtures for Institutional Facilities

- Additional and more detailed information, along with reformatting, brings the Institutional portion of Table 2902.1 current with the best practices of the health-care industry.
- Previous table did not adequately distinguish between employees, customers, patients and inmates in certain types of facilities.

166

166

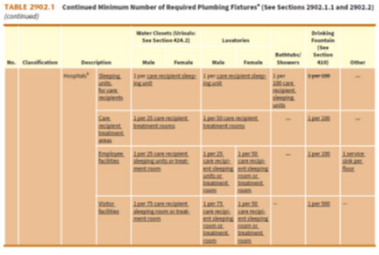
Table 2902.1 Minimum Number of Fixtures for Institutional Facilities



167

167

Table 2902.1 Minimum Number of Fixtures for Institutional Facilities



168

168

2902.1.2 Plumbing Fixture Calculations

- A methodology has been established to determine the required plumbing fixture count in many assembly uses where single-user or family/assisted toilet rooms are provided
- Number of fixtures in single user and family/assisted toilet rooms to be deducted proportionately from the required gender ratios of Table 2902.1

169

169

2902.1.2 Plumbing Fixture Calculations

EXAMPLE:

Given: A theater having 2000 occupants, the male water closet (WC) ratio is 1/125 and the female ratio is 1/65:

Design layout: Four single-user toilet facilities with the remainder of fixtures in multiple-user toilet facilities (separate sex).

Step 1: Determine minimum required number of male water closets, all located in a multiple-user toilet facility: 1000/125 = 8

Step 2: Determine minimum required number of female water closets, all located in a multiple-user toilet facility: 1000/65 = 15.4

Step 3: Add minimum required number of male and female water closets

Total = 23.4 WCs

170

170

2902.1.2 Plumbing Fixture Calculations

Step 4: Proportionally reduce the number of water closets in the multiple-user toilet facilities (because of the presence of water closets located in single-user toilet facilities). In this example, each water closet in a single-user toilet facility allows for a reduction of 8/23.4 = 0.34 male water closets and 15.4/23.4 = 0.66 female water closets in the multiple-user toilet facilities.

Step 5: Therefore, four single-user toilet facilities, (4 x 0.34)= 1.36 male WC reduction and (4 x 0.66) = 2.64 female WC reduction.

Result: Thus, the multiple-user toilet facilities require a minimum of:

Male: 8 - 1.36 = 6.64 = 7 water closets

Female: 15.4 - 2.64 = 12.76 = 13 water closets

171

171

~~2902.2.1~~ Toilet Facility Designations

- Confusing and partially redundant provisions addressing designation of single-user and family/assisted-use toilet and bathing facilities have been deleted.
  - Section 2902.1.2 requires such toilet facilities to be identified as being available for use by all persons regardless of their sex
  - However, Section 2902.2.1 previously indicated that these facilities "shall not be required to be identified for exclusive use by either sex" (not required, but permitted)
- Deletion of Section 2902.2.1 clarifies that single-user and family/assisted-use toilet and bathing facilities required to be identified as being available for use by all persons regardless of their sex.

172

172

2902.3.6 Door Locking of Multiple-use Toilet Facilities

- In a multi-user toilet room, the egress door is now permitted to be lockable from the interior side provided three conditions are met
- Egress door to be:
  - Lockable from inside of the toilet room only by authorized personnel by the use of a key or other approved means
  - Readily openable from the toilet room in accordance with Section 1010.2
  - Capable of being unlocked from outside the toilet room with a key or other approved means
- Allows for a safe area of refuge in the event of an emergency such as an active shooter

173

173

2902.3.6 Door Locking of Multiple-use Toilet Facilities

174

174

Copyright 2023 International Code Council

3001.2 Elevator Emergency Communication Systems

- Technical details of required elevator emergency communications system are no longer addressed in IBC as they are provided in reference standard
  - ASME—2019/CSA B44-19 *Safety Code for Elevators and Escalators*
- In addition, IBC now requires system to provide a means to enable authorized personnel to verify:
  - The presence of someone in car
  - That the person(s) is trapped
- Once an entrapment is verified, system to enable authorized personnel to:
  - Determine if assistance is needed
  - Communicate when help is on the way
  - Communicate when help arrives on the site

175

175

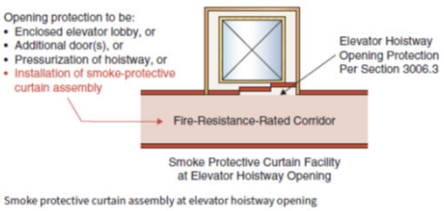
3006.3 Smoke Protective Curtain Assemblies at Elevator Hoistway Openings

- Where Section 3006.2 requires protection at an elevator hoistway door, a fifth method of protection utilizing a *smoke protective curtain assembly* has been established
- Defined as "a listed smoke and draft control curtain assembly consisting of a curtain coil, control unit, and perimeter sealing system"
- Curtain assembly to:
  - Comply with smoke and draft control requirements in Section 716.2.2.1.1 when tested per UL 1784 without an artificial bottom seal
  - Be equipped with a control unit listed to UL 864
  - Comply with Section 2.11.6.3 of ASME A17.1/CSA B44
  - Be installed and maintained in accordance with NFPA 105

176

176

3006.3 Smoke Protective Curtain Assemblies at Elevator Hoistway Openings



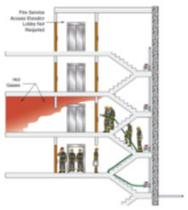
Smoke protective curtain assembly at elevator hoistway opening

177

177

3007.6 Fire Service Access Elevator Lobbies

- Mandate of a lobby at each hoistway opening for a fire service access elevator no longer applicable at roof level of building having an occupiable roof.
  - Only eliminates lobby, not rooftop access.



178

178

3103 Temporary Structures

- New definitions, reduced environmental loads, installation inspections and maintenance inspections now included for temporary structures.
- Multiple new and modified requirements for "public-occupancy temporary structures."
  - *Any building or structure erected for a period of one year or less that serves an assembly occupancy or other public use.*

179

179

3103 Temporary Structures

- Public-occupancy assembly structures are specifically regulated for:
  - Assumption of 10-year service life, with allowance for extensions for up to one-year by building official where multiple conditions are met.
  - Permissible reduction in environmental design live loads as specified where demonstrated compliant by registered design professional.
  - Installation and maintenance inspections by qualified persons
    - Components when acquired and at least once a year.
    - At regular intervals when in service to ensure performance as intended.
  - Controlled occupancy procedures to address vacation of structures during environmental event.

180

180

Copyright 2023 International Code Council

3103.6.1 Public-Occupancy Temporary Structures—Structural Loads

- Public-occupancy temporary structures to be designed per Chapter 16, except as modified, and include snow, wind, seismic, ice and tsunami loads, as well as temporary foundations.

TABLE 3103.6.1.1 Reduction Factors for Ground Snow Loads for Public-Occupancy Temporary Structures

	Service Life	
Risk Category	≤ 10 yr	>10 yr
II	0.7	1.0
III	0.8	1.0
IV	1.0	1.0

TABLE 3103.6.1.2 Reduction Factors for Wind Loads for Public-Occupancy Temporary Structures

	Service Life	
Risk Category	≤ 10 yr	>10 yr
II	0.8	1.0
III	0.9	1.0
IV	1.0	1.0

181

181

3111.3.5 Elevated PV Support Structures

- Overhead photovoltaic support structures now regulated where potential exists for people or vehicles in space beneath them.
  - Not applicable where installed over agricultural use
- Where installed over open-grid framing or noncombustible deck:
  - Panels to be tested, listed and labeled with fire type rating per UL 1703, or per UL 61730 1&2.
  - Panels marked "not fire rated" not to be installed on elevated PV support structures.
- Where installed over roof assembly, panel system to have fire classification in accordance with Section 1505.9

182

182

~~3114~~ Public Use Restrooms in Flood Hazard Areas

- Alternative elevation previously permitted for public use restroom buildings located on publicly owned lands in flood hazard areas have been deleted.
  - FEMA indicated allowance set forth in 2021 IBC not consistent with NFIP.

183

183

Part 8

- Appendices
  - Appendix P Sleeping Lofts

184

184

Appendix P Sleeping Lofts

- New Appendix P sets forth the scoping limitations and technical criteria for sleeping lofts that are provided within Group R dwelling units and sleeping units
- Provisions based in large part on IRC Appendix RQ regulating tiny houses
- The following lofts are exempt from compliance with Appendix P
  - Maximum depth of < 3 feet, or
  - Floor area < 35 square feet, or
  - Not provided with a permanent means of egress
- Scoping limitations include:
  - Floor area < 70 square feet, and
  - Ceiling height ≤ 7 feet for more than ⅓ of loft floor area

185

185

Appendix P Sleeping Lofts

- Special technical requirements/allowances include:
  - Means of egress
  - Guards
  - Smoke alarms
- Where permanent means of egress provided for sleeping lofts, the egress to comply with Chapter 10, except as modified in the following areas:
  - Stairway width, treads, risers and landings
  - Alternate tread devices height limit
  - Ship's ladder's height limit
  - Ladder's height limit, size, capacity and incline

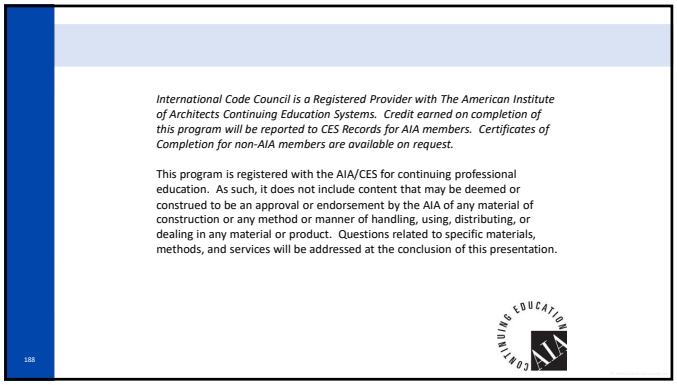
Non-compliant guard at sleeping loft

186

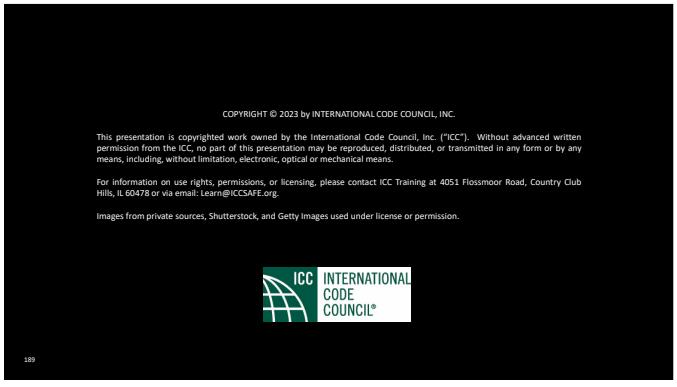
186


Thank you for Attending
Discussion
• Visit learn.iccsafe.org for more training opportunities
187

187


International Code Council is a Registered Provider with The American Institute of Architects Continuing Education Systems. Credit earned on completion of this program will be reported to CES Records for AIA members. Certificates of Completion for non-AIA members are available on request.
This program is registered with the AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product. Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.
CONTINUING EDUCATION
AIA
188

188


COPYRIGHT © 2023 by INTERNATIONAL CODE COUNCIL, INC.
This presentation is copyrighted work owned by the International Code Council, Inc. ("ICC"). Without advanced written permission from the ICC, no part of this presentation may be reproduced, distributed, or transmitted in any form or by any means, including, without limitation, electronic, optical or mechanical means.
For information on use rights, permissions, or licensing, please contact ICC Training at 4051 Flossmoor Road, Country Club Hills, IL 60478 or via email: Learn@ICCSAFE.org.
Images from private sources, Shutterstock, and Getty Images used under license or permission.
ICC INTERNATIONAL CODE COUNCIL®
189

189


ICC
INTERNATIONAL CODE COUNCIL®
International Code Council, Inc.
Training Department
888-ICC-SAFE, Ext 33821
Learn@ICCSAFE.org
Building Professional Careers!
190

190