

## **Fire Related Construction**

Chapter 7 of the IBC primarily focuses on the fire resistance rating of fire separation assemblies and their application within buildings. These assemblies include fire walls, fire barriers such as horizontal exits, shaft enclosures, and occupancy separations. This chapter of the IBC also focuses on fire protection requirements related to penetration fire stop systems, penetration of membranes, and other passive fire protection features. The NFPA 101 has similar requirements related to most of the provisions of the IBC. The differences are identified in the following tables but there are very few major differentiations between the two codes. One item of note that is addressed differently between the two codes is the application of smoke dampers at the penetration of shaft enclosures as required by the IBC. The NFPA 101 has no similar provision in it or its referenced codes and the provision of smoke dampers at shafts is a significant differentiation between the two codes. Of note with regards to smoke dampers is that several jurisdictions including the Commonwealth of Virginia have modified the IBC through their amendments and have removed the requirement for smoke dampers at shaft penetrations.

Of similar note, the Commonwealth of Virginia has also modified chapter 7 of the IBC with regards to elevator lobbies and has removed that requirement regardless of occupancy. A straight forward application of the IBC, without amendments, will require elevator lobbies in occupancies that have a fire rated corridor such as residential (apartments, healthcare) occupancies. The NFPA 101 has no similar requirements to elevator lobbies.

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**NFPA 101 2006**

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**Exterior Walls 704**

Allowable area of openings	704.8	Max. area of protected or unprotected openings permitted in an exterior wall shall not exceed values in Table 704.8.
	704.8.1	In buildings with auto. Sprinklers the max area of unprotected openings, except Groups H-1, H-2, H-3, shall be the same as tabulated limits for protected openings.
	704.8.2	Unlimited unprotected openings permitted in exterior walls of first story above grade facing a street with fire separation over 15 ft

8.2.2.4, 8.3.4.1	Walls used as fire barrier shall comply with NFPA 221 Chapter 7. The limitation on percentage width of openings shall not apply.; Every opening in a fire barrier shall be protected to limit the spread of fire and resist smoke movement
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**Fire Walls 705**

Horizontal Continuity	705.5	Fire walls must extend from exterior wall to exterior wall and shall extend at least 18 in. beyond exterior surface of walls Exceptions: (1) Permitted to terminate at end of combustible siding provided 1 hour FR for a distance of 4 ft on both sides of wall (2) Permitted to terminate at interior of noncombustible surface where protected by sprinklers.
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8.2.2.3	Fire barriers are continuous from outside wall to outside wall or from one fire barrier to another, or from floor to floor of interstitial space
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**Fire Barriers 706**

Atriums	706.3.5 directing to 404.5	Atrium separated by 1 hour barrier Exceptions: (1) Glass wall assembly with 3/4 hour rating (2) Adjacent spaces on any of the three floors of the atrium not required to be separated from atrium if included in smoke control system design
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8.6.7	Atrium is permitted provided that (2) Access to exits and exit discharge in accordance with 7.7.2 is permitted to be within atrium (3) Entire building is protected by supervised sprinklers.
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**Shaft Enclosures**      **707**      **Exceptions: (2.1) Area of the floor opening between stories does not exceed twice the horizontal projected area of escalator and in protected by draft curtain and sprinklers (6) Not required for approved masonry chimneys (9) Not required for floor openings between mezzanine and floor below**

**8.6.4-8.6.5, 8.6.3 (3) directing to 8.6.8.6, 8.6.7**      **Shafts that do not extend to bottom or top of building shall be permitted to be protected by fire dampers at highest or lowest level.**

Refuse and laundry chutes      707.13.3      Access openings enclosed by fire barrier of 1 hour or less. Openings shall be protected by opening protectives having a rating not less than 3/4 hour

Table 8.3.4.2, 8.6.5      Vertical shaft has minimum fire protection ratings of 2 hours if connecting four or more stories, and 1 hour if less than four stories.

Elevator lobby      707.14.1      **Exceptions: (1) Enclosed lobby not required at street floor if entire street floor is sprinklered, (2) A lobby is not required if the elevator is not required to be located in the shaft, (3) In other than high-rises, enclosed elevator lobbies not required where protected by auto. Sprinklers, (4) Jails, not applicable, (5) Allows smoke partitions in lieu of fire partitions where the building is completely sprinklered, and (6) Enclosed lobby not required where hoistway is pressurized**

Table 8.3.4.2      Elevator hoistway enclosure has fire resistance rating of 2 hours if connecting four or more stories, and 1 hour of connecting less than four stories

**Smoke Barriers**      **709**      **N/A**

**8.5.3**      **Fire barrier shall be permitted to be used as a smoke barrier, provided it meets 8.5**

Openings      709.5 directing to 715      Exception: In Group I-2, a pair of opposite swinging doors without cenet mullion shall have vision panels with rated glazing;

8.5.4.2 directing to 8.2.2.5, 8.5.4.3, 8.5.4.5 directing to 8.3.3

**Smoke Partition**      **710**

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Continuity      710.4      Shall extend from top of foundation or floor below to underside of the floor or roof sheathing, deck, or slab above or to the underside of the ceiling where ceiling membrane limits smoke transfer

8.4.2 (3)      If enclosing hazardous areas, permitted to terminate at underside of suspended ceiling system where ceiling system is membrane that limits smoke transfer and grilles from hazardous area into plenum space is not permitted

**Penetrations      712**

Through-penetration firestop system      712.3.1.2      Shall have an F rating of not less than the required fire-resistance rating of the wall penetrated

8.3.5.1.3      Shall have F rating of at least 1 hour, but not less than the fire-resistive rating of the fire barrier penetrated.

Membrane penetrations      712.3.2 (2)      Electrical boxes on opposite side of the wall or partition shall be separated: by a horizontal distance of at least 24 in, by solid fireblocking, or by protecting both boxes with listed putty pads

8.3.5.6.3 (2)      Membrane penetrations for any listed electrical outlet box shall be permitted, provided that such boxes have been tested for fire-resistive rating assemblies

Through-penetration firestop system      712.4.1.1.2      Exception: T-rating not required for floor penetrations contained and located within the cavity of a wall

8.3.5.1.4 (2)      Rating not required for penetrations through floors/floor assemblies where penetration is not in direct contact with combustible material

**Fire-resistant joint systems      713**

General      713.1      Exceptions: Not required for joints in: floors within a single dwelling unit, floors where joint is protected by enclosure, floors within atriums, malls and parking structures, mezzanine floors, walls with permitted unprotected openings, roofs where openings are permitted and control joints

8.3.6      No given exceptions

**Opening Protectives      715**

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Title	Section	Requirements
Fire-resistance rated glazing	715.2	Labeled glazing as part of a fire-resistance rated wall assembly in accordance with ASTM E 119 shall not be required to comply with section 715
<b>Ducts and Air Transfer Openings</b>	<b>716</b>	
Smoke Damper actuation methods	716.3.2.1	Damper shall close upon activation of smoke detector in accordance with 907.10 and one of the following methods: (1) Where damper is within duct, detector shall be within 5 feet of the damper (2) Where damper is above doors in a smoke barrier, spot detector shall be on either side of door opening (3) When damper is within unducted opening, install spot detector within 5 feet horizontally of damper (4) Where damper is in corridor wall/ceiling, smoke detection system allowed to control damper
Shaft Enclosures	716.5.3	Exception 1: Fire dampers not required at shaft penetrations when steel exhaust subducts are vertically extended at least 22 in., or penetration has been tested under ASTM E 119 as an assembly, or ducts are part of smoke control system design, or penetrations are in a parking garage separated by 2 hr construction Exception 2: In Group B and R occupancies with auto. sprinklers, smoke dampers not required at penetration where kitchen, clothes dryer, bathroom and toilet exhaust openings are installed with exhaust subducts that extend at least 22 in.; and an

Section	Requirements
8.3.3.2.1 , 8.3.3.5	Fire-resistance rated glazing shall comply with NFPA 257 Rated glazing permitted in fire barriers having FR of 1 hour or less
8.5.5.7.3	Required smoke dampers in air-transfer openings shall close upon detection of smoke by approved smoke detectors
8.6.4.3	Shafts that do not extend to bottom or top of building shall be permitted to be protected by fire dampers at highest or lowest level.

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		exhaust fan is installed at upper terminal of the shaft		
Fire Partitions	716.5.4	Exceptions : In other than Group H, fire dampers not required where: (1) Partitions are tenant separation or corridor walls in a building with auto. sprinklers (2) Tenant partitions in covered malls where walls not required to extend to underside of roof		No given exceptions
Smoke Barriers	716.5.5	A smoke damper designed to resist the passage of smoke shall be provided at each point a duct or air-transfer opening penetrates a smoke barrier	8.5.5.3	Smoke dampers shall not be required: (2) where ducts/ air transfer opening are part of smoke control system (3) air movement prevents recirculation (5) ducts penetrate floors that serve as smoke barriers
Membrane penetrations	716.6.2	Ducts/air transfer openings that penetrate the ceiling membrane of a rated floor/ceiling or roof/ceiling assembly shall be protected by one of the following: 1. A shaft enclosure 2. A listed ceiling radiation damper at ceiling line where duct penetrates the ceiling or where a diffuser penetrates the ceiling	N/A	No applicable code
<b>Concealed Spaces</b>	<b>717</b>			
Fireblocking	717.2	In combustible construction, install fireblocking to cut off concealed draft openings and form effective barrier between floors, between a top story and roof/attic space	8.6.10.1.	Every exterior and interior wall and partition shall be firestopped at each floor level, at the top story ceiling level and at the level of support for roofs
	717.2.2	Provided in concealed spaces of stud wall and partitions, including furred spaces and parallel rows vertically at ceiling and floor	(1)	

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levels and horizontally at intervals less than 10 ft.

Combustible materials in concealed spaces	717.5	Combustible materials shall not be permitted in concealed spaces of buildings or Type I or II construction
<b>Fire-Resistance requirements for plaster</b>	<b>718</b>	<b>The fire resistance requirements for plaster shall comply with Section 718</b>
<b>Thermal- and Sound-Insulating Materials</b>	<b>719</b>	<b>Insulating materials and all layers of insulation shall comply with Section 719 except fiberboard insulation, foam plastic insulation and duct and pipe insulation</b>
<b>Prescriptive Fire Resistance</b>	<b>720</b>	<b>The provisions of section 720 contains prescriptive details of fire-resistance-rated building elements</b>
<b>Calculated Fire Resistance</b>	<b>721</b>	<b>The provisions of section 721 contains procedures by which the fire resistance of specific materials or combination of materials is established by calculations</b>

	No related section
	<b>No related section</b>

## **Interior Finishes**

Chapter 8 of the IBC focuses on interior finish requirements. This section of the code identifies flame spread and smoke development characteristics and provides a definition of interior finish based on these parameters. The interior finish incorporates wall coverings, floor coverings, and decorative materials.

The NFPA 101 also addresses interior finish, but generally provides less detail than the IBC.

The following tables summarize and compare the requirements of the two codes. The two codes have similar requirements pertaining to the type of interior finish and flame spread parameters allowed in each occupancy, but NFPA 101 is more restrictive.

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<b>General</b>	<b>801</b>	
Scope	801.1	Explains decorative materials and those used for materials and trim. Materials that are less than .036 inches thick and applied directly to walls or ceilings shall not be subject to interior finish requirements
Decorative Materials and Trim	801.1.2	Decorative materials must comply with section 806 for flame resistance and combustibility.
Applicability	801.1.3	Flood damage resistant materials required when below flood elevation as described in 1612.3.
Applications	801.2	Combustible materials are permitted to be used as combustible materials. Show windows in the exterior walls of the first story above grade may be made of wood. Foam plastics shall not be used as interior finish or trim except as provided in section 2603.9 or 2604.

10.1, 10.2.1, 10.2.1.1	Applies to interior finishes, contents, and furnishings in new and existing buildings. Finishes tested to simulate actual fire conditions. Class A materials that are less than 1/28 in. thick and applied directly to walls or ceilings shall not be subject to interior finish requirements. Fixed or movable walls, partitions, wall pads, etc., shall be considered interior finish and shall not be considered decorations or furnishings.
10.3	Covers requirements for furnishings that do not meet the def. of interior finish.
	No related section
10.2.4.3	Foam plastics are not permitted as interior wall or ceiling finishes unless large scale tests are conducted as stated in 10.2.4.3.1 in order to substantiate their combustibility characteristics. Cellular or foamed plastic shall be permitted for trim not in excess of 10 percent of the wall or ceiling area, and complying with the dimensions as listed in section 10.2.4.3.2.

<b>Wall and Ceiling Finishes</b>	<b>803</b>	
Stability	803.3	Interior finish may not come readily detached at 200°F for 30 minutes.

	No related section
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Title	Section	Requirements
Application	803.4	Defines requirements for materials that are applied to walls, ceilings, or structural elements that are required to be of noncombustible or fire resistive construction.
Direct Attachment and Furred Construction	803.4.1	If not directly applied, interior finish materials must be on furring strips no greater than 1.75 inches thick; when on furring strips, need to fill void b/w strips with inorganic or class A fill or fire blocking every eight feet per section 717.
Set-out Construction	803.4.2	Defined as applied at a distance greater than permitted in section 803.4.1; must be Class A material or be sprinklered on both sides of the material or attached to noncombustible backing; hangers and assembly members or dropped ceilings must be noncombustible except in Type III or V construction where fire-retardant treated wood may be used.
Heavy Timber Construction	803.4.3	All finishes that are applied directly against wood decking or planking of Type IV construction, or applied to wood furring strips applied to wood decking must be fireblocked according to section 803.4.1.

Section	Requirements
	No related section

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Materials	803.4.4	All finishes that are not more than .25 inches thick must be applied directly to a noncombustible backing. Exceptions for Class A materials and materials where qualifying tests were conducted with the material spurred or suspended from the noncombustible backing.
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	No related section
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Interior Finish Requirements Based on Groups	803.5	See Table 803.5 for Interior Wall and Ceiling Finish Requirements By Occupancy ( <i>attached</i> )
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10.2.2.1	See NFPA Table A10.2.2 ( <i>attached</i> ).
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Textiles	803.6	Any textile used as interior wall or ceiling finish must comply with one of the following requirements listed in 803.6.1, 803.6.2 or 803.6.3
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10.2.4.1	The use of textiled materials on walls or ceilings shall comply with one of the following conditions:
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		Not Addressed
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	(1) Textiles with Class A rating shall be permitted on partitions that don't exceed three-quarters of the floor-to-ceiling height or don't exceed 8 ft., whichever is less.
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		Not Addressed
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	(2) Textiles with Class A rating shall be permitted to extend not more than 48 in. above the finished floor.
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		Not Addressed
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	(3) Previously approved existing installations of textile material having a class A rating shall be permitted to be continued to be used.
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Room Corner Test, Textiles	803.6.2	Textile coverings shall meet the criteria of Section 803.6.2.1 when tested in manner intended for use in accordance with method B protocol of NFPA 265 using the product mounting system, including adhesive.
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10.2.4.1.5	Textiles are permitted on walls and partitions where tested in accordance with NFPA 265.
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Title	Section	Requirements
Room Corner Test, Ceiling and Wall Finish	803.6.3	Textile coverings shall meet the criteria of Section 803.2.1 when tested in the manner intended for use in accordance with NFPA 286, using the product mounting system, including adhesive
Expanded Vinyl Wall Coverings	803.7	Comply with section 803.6
Insulation	803.8	Thermal and acoustical insulation shall comply with Section 719.
Acoustical Ceiling Tiles	803.9	Metal suspension systems for acoustical tile and lay-in panel ceilings must comply with this section.
Materials and Insulation	803.9.1	Must be installed according to manufacturer's recommendations and applicable provisions for applying interior finish.
Suspended Acoustical Ceilings	803.9.1.1	Install per ASTM C 635 and ASTM C 636.
Fire -resistance-rated Construction	803.9.1.2	If Ceiling is part of fire rated construction, then must comply with Chapter 7.
<b>Interior Floor Finish</b>	<b>804</b>	
General	804.1	Code applies to all floor finishes except traditional floors ( wood, vinyl, linoleum or terrazzo, and resilient floor covering materials that are not compromised of fibers.
Testing and Identification	804.3	Tested by approved agency per NFPA 253, have style/maker/supplier identified with hang tag; to be classified per Section 804.2. Carpets and similar coverings

Section	Requirements
10.2.4.1.6	Materials are permitted on walls, partitions and ceilings where tested in accordance with NFPA 286.
10.2.4.2	Comply with section 10.2.2.1
	No related section
10.2.2.2	Applies only when required by specific occupancy chapter or when the floor finish is of unusual hazard.
	No related section

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**Section                      Requirements**

and underlayment must also be tested.

Minimum Critical Radiant Flux      804.4.1      Interior floor finish in exit enclosures, exit passageways, and corridors shall not be less than Class I in Groups I-2 and I-3 and not less than Class II in Groups A, B, E, H, I-4, M, R-1, R-2, and S. In all areas, floor covering must comply with DOC FF-1 "pill test." Exception applies if building is fully sprinklered.

10.2.2.2      Business occupancy allows Class I and II

**Combustible Materials In Type I and II Construction**

Application      805.1      Combustible materials installed on floors of Type I or II construction must comply with the following Section 805.1.1 through 805.1.3 Exception: Stages and Platforms constructed in accordance with Sections 410.3 and 805.1.3.

No related section

Subfloor Construction      805.1.1      Floor sleepers, bucks, and nailing blocks shall not be constructed of combustible materials, unless the space b/w the fire-resistance-rated floor construction and the flooring is either solidly filled with approved noncombustible materials or fireblocked in accordance with Section 7.7, and provided that such open

No related section

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spaces shall not extend under or through permanent partitions or walls.

Wood Finish Flooring	805.1.2	Wood finish flooring is permitted to be attached directly to the embedded or fireblocked wood sleepers and shall be permitted where cemented directly to the top surface of approved fire-resistance-rated floor construction or directly to a wood subfloor attached to sleepers as provided for in Section 805.1.1.
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No related section

Insulating Boards	805.1.3	Combustible insulating boards not more than 1/2 inch thick and covered with approved finish flooring are permitted where attached directly to a noncombustible floor assembly or to wood subflooring attached to sleepers as provided for in Section 805.1.1.
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No related section

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Title	Section	Requirements
General	805.1	Curtains, drapes, and other decorative materials are to be noncombustible or flame retardant per NFPA 701 Section 806.2 in occupancy Groups A and I. In I-1 and I-2, flame retardant combustible decorations, unless limited quantity. No combustible decorations in I-3. Fixed or moveable walls or partitions shall be considered interior finish if they cover 10 percent or more of the wall or ceiling area, and shall not be considered decorative materials or furnishings. In Group B and M occupancies, fabric suspended from the ceiling and not supported by the floor shall meet the flame propagation performance criteria in accordance with Section 806.2 and NFPA 701 or shall be noncombustible.

Section	Requirements
10.2.5.1	Up to 10 percent of interior wall and ceiling finish may be considered trim and may be Class C, where interior wall and ceiling finish of Class A or Class B is required.

<b>Noncombustible Materials and Trim 806</b>		
Noncombustible Materials	806.1.1	Use of noncombustible materials is not limited.
Combustible Decorative Materials	806.1.2	The permissible amount of decorative materials meeting the flame propagation criteria of NFPA 701 shall not exceed 10 percent of the aggregate area walls and ceilings. Exceptions for Group A, B and M.

No related section	
10.2.5.1	Up to 10 percent of interior wall and ceiling finish may be considered trim and may be Class C, where interior wall and ceiling finish of Class A or Class B is required.

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Title	Section	Requirements
Acceptance Criteria and Reports	806.1.2	Where required by Section 806.1, decorative materials shall be tested by an approved agency and meet the flame propagation performance criteria of NFPA 701 or such materials shall be noncombustible. Report of test must be available for inspection.
Foam Plastics	806.3	Foam plastic used as trim in any occupancy shall comply with Section 2604.2
Proxylin Plastic	806.4	Imitation Leather or other material consisting of or coated with a proxylin or similarly hazardous base shall not be used in Class A occupancies

Section	Requirements
	No related section
	No related section
	No related section

IBC TABLE 803.5 - INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY						
GROUP	SPRINKLERED I			NONSPRINKLERED		
	Exit enclosures and exit passageways a,b	Corridors	Rooms and enclosed spaces c	Exit enclosures and exit passageways a,b	Corridors	Rooms and enclosed spaces c
A-1 & A-2	B	B	C	A	A d	B e
A-3 f , A-4, A-5	B	B	C	A	A d	C
B, E, M, R-1, R-4	B	C	C	A	B	C
F	C	C	C	B	C	C
H	B	B	C g	A	A	B
I-1	B	C	C	A	B	B
I-2	B	B	B h, i	A	A	B
I-3	A	A j	C	A	A	B
I-4	B	B	B h, i	A	A	B
R-2	C	C	C	B	B	C
R-3	C	C	C	C	C	C
S	C	C	C	B	B	C
U	No restrictions			No restrictions		

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m<sup>2</sup>.

- a. Class C interior finish materials shall be permitted for wainscoting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section [803.4.1](#).
- b. In exit enclosures of buildings less than three stories in height of other than Group I-3, Class B interior finish for nonsprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted.
- c. Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and the rooms or spaces on both sides shall be considered one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.
- d. Lobby areas in Group A-1, A-2 and A-3 occupancies shall not be less than Class B materials.
- e. Class C interior finish materials shall be permitted in places of assembly with an occupant load of 300 persons or less.
- f. For places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be permitted.
- g. Class B material is required where the building exceeds two stories.
- h. Class C interior finish materials shall be permitted in administrative spaces.
- i. Class C interior finish materials shall be permitted in rooms with a capacity of four persons or less.
- j. Class B materials shall be permitted as wainscoting extending not more than 48 inches above the finished floor in corridors.
- k. Finish materials as provided for in other sections of this code.
- l. Applies when the exit enclosures, exit passageways, corridors or rooms and enclosed spaces are protected by a sprinkler system installed in accordance with Section [903.3.1.1](#) or [903.3.1.2](#).

**NFPA 101 Table A.10.2.2 Interior Finish Classification Limitations**

<b>Occupancy</b>	<b>Exits</b>	<b>Exit Access Corridors</b>	<b>Other Spaces</b>
Assembly — New			
>300 occupant load	A I or II	A or B I or II	A or B
≤300 occupant load	A I or II	A or B I or II	A, B, or C
Assembly — Existing			
>300 occupant load	A	A or B	A or B
≤300 occupant load	A	A or B	A, B, or C
Educational — New	A I or II	A or B I or II	A or B; C on low partitions*
Educational — Existing	A	A or B	A, B, or C
Day-Care Centers — New	A I or II	A I or II	A or B
Day-Care Centers — Existing	A or B	A or B	A or B
Day-Care Homes — New	A or B I or II	A or B	A, B, or C
Day-Care Homes — Existing	A or B	A, B, or C	A, B, or C
Health Care — New	A	A	A
	NA	B on lower portion of corridor wall*	B in small individual rooms*
	I or II	I or II	
Health Care — Existing	A or B	A or B	A or B
Detention and Correctional — New (sprinklers mandatory)	A or B I or II	A or B I or II	A, B, or C
Detention and Correctional — Existing	A or B I or II	A or B I or II	A, B, or C
One- and Two-Family Dwellings and Lodging or Rooming Houses	A, B, or C	A, B, or C	A, B, or C

Hotels and Dormitories — New	A I or II	A or B I or II	A, B, or C
Hotels and Dormitories — Existing	A or B I or II*	A or B I or II*	A, B, or C
Apartment Buildings — New	A I or II	A or B I or II	A, B, or C
Apartment Buildings — Existing	A or B I or II*	A or B I or II*	A, B, or C
Residential Board and Care — <i>(See Chapters 32 and 33.)</i>			
Mercantile — New	A or B I or II	A or B	A or B
Mercantile — Existing			
Class A or Class B stores	A or B	A or B	Ceilings — A or B; walls — A, B, or C
Class C stores	A, B, or C	A, B, or C	A, B, or C
Business and Ambulatory Health Care — New	A or B I or II	A or B	A, B, or C
Business and Ambulatory Health Care — Existing	A or B	A or B	A, B, or C
Industrial	A or B I or II	A, B, or C I or II	A, B, or C
Storage	A or B I or II	A, B, or C	A, B, or C

Notes:

- (1) Class A interior wall and ceiling finish — flame spread 0–25, (new applications) smoke developed 0–450.
- (2) Class B interior wall and ceiling finish — flame spread 26–75, (new applications) smoke developed 0–450.
- (3) Class C interior wall and ceiling finish — flame spread 76–200, (new applications) smoke developed 0–450.
- (4) Class I interior floor finish — critical radiant flux, not less than 0.45 W/cm<sup>2</sup>.
- (5) Class II interior floor finish — critical radiant flux, not more than 0.22 W/cm<sup>2</sup> but less than 0.45 W/cm<sup>2</sup>.
- (6) Automatic sprinklers — where a complete standard system of automatic sprinklers is installed, interior wall and ceiling finish with a flame spread rating not exceeding Class C is permitted to be used in any location where Class B is required and with a rating of Class B in any location where Class A is required; similarly, Class II interior floor finish is permitted to be used in any location where Class I is required, and no critical radiant flux rating is required where Class II is required. These provisions do not apply to new detention and correctional occupancies.
- (7) Exposed portions of structural members complying with the requirements for heavy timber construction are permitted.

\*See corresponding chapters for details.

## **Fire Protection Systems**

Chapter 9 of the IBC focuses on fire protection systems. These systems include automatic sprinkler systems, standpipe systems, fire extinguishers, and fire alarm and detection systems. The NFPA 101 provides little in the way of specific guidance or requirements with regard to these systems, and when required generally refers to other NFPA Codes and Standards. This concept is particularly true for automatic sprinkler system, standpipe systems, and fire detection and alarm systems. The NFPA 101 provides no direct guidance or citation related to smoke venting or smoke control, while these systems and features are more explicitly identified and detailed in the IBC.

Although several comparisons between the two codes are identified in the following tables, for the most part, the IBC provides a greater level of detail than explicitly identified within the NFPA 101.

**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
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Section	Requirements
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**General 901**

Scope	901.1	Specifies when fire protection systems are required and the specifications for those systems
Fire protection systems	901.2	Shall be installed and maintained per IBC and IFC. Any system not required is permitted but must meet requirements of the code
Modifications	901.3	Building official must approve removal or modifications to any system
Threads	901.4	Shall be compatible with connections used by the local fire department
Acceptance tests	901.5	Systems shall be tested and approved per the IFC and standards in the IBC and witnessed by building official
Fire areas	901.7	Shall be separated by fire barriers having a fire resistance rating based on Table 706.3.9

	No related section
9.7.5	Sprinkler and standpipe systems shall be tested and maintained in accordance with NFPA 25
	No related section

**Automatic sprinkler system 903**

General	903.1	Sprinkler systems shall comply with this section. Alternative fire extinguishing systems complying with 904 shall be permitted
Where required	903.2	Sprinkler system shall be provided except in spaces in telecommunication buildings used for equipment, batteries and engines and equipped with detection system and 1 hr walls and 2 hr floor/ceiling assemblies

9.7.1.1, 9.7.3.1	Sprinkler systems required to comply with this NFPA 13. Alternate systems permitted in lieu of sprinkler where appropriate
	No related section

**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
Group A	903.2.1	Sprinkler system shall be provided throughout floor area, as provided in the section. Not required in areas used exclusively as participant sport areas
Group I	903.2.5	Sprinklers shall be provided throughout building. NFPA 13D or NFPA 13R allowed for Group I-1 facilities
Group S-1	903.2.8	Sprinklers required where area exceeds 12,000 sq. ft., is located more than 3 stories above plane and combined areas on all floors > 24,000
Group S-2	903.2.9	Sprinklers required in buildings classified as enclosed parking garages unless located below R-3 occupancies
Windowless stories	903.2.10	Shall be installed in all locations in this section except R-3 and Group U
During construction	903.2.11	Sprinklers required per IFC
Other hazards	903.2.12	Sprinkler protection provided for ducts conveying hazardous exhausts and commercial cooking operations
Other required suppression systems	903.2.13	Sprinkler system required in buildings and areas in Table 903.2.13
Installation requirements	903.3	Sprinklers must be installed in accordance with NFPA standards

Section	Requirements
12.3.5.2, 12.3.5.3	Assemblies with over 300 occupants shall be protected by sprinkler system unless, (1) multipurpose room less than 12,000 sq. ft. with no exhibit (2) Gyms, pools, skating ring with no seating (3) Stadiums and arenas where sprinklers are ineffective (4) Certain portions of enclosed stadiums and arenas
18.3.5.1, 18.3.5.4	In Type I and II construction, alternative protection measures can be substituted for sprinklers without building classified as nonsprinklered where sprinklers prohibited by AHJ
42.8.3.5	Extinguishing system not required
	No related section
43.6.4.1	Sprinklers shall be provided on highest floor of construction and floor below when work area involves over 50% of aggregate area
	No related section
9.7.1.1	Sprinkler systems required to comply with this NFPA 13.

**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
Exempt locations	903.3.1.1.1	Sprinklers not required in rooms with detection systems where water application will constitute a hazard, fire code official considers sprinklers undesirable, generator/transformer rooms have 2 hr separation, or noncombustible rooms.
Quick-response and residential sprinklers	903.3.2	Shall be installed throughout all spaces in smoke compartment containing sleeping units in Group I-2.
Obstructed locations	903.3.3	Install sprinklers so the water pattern is not obstructed by covered areas greater than 4 ft wide
Actuation	903.3.4	Shall be automatically actuated unless permitted by code
Water supplies	903.3.5	Potable water supply shall be protected against backflow.
Limited area sprinkler systems	903.3.5.1.1	System limited to 20 heads or less connected to the domestic service that complies with the requirement for valves between rise and sprinklers
Hose threads	903.3.6	Fire hose threads and fittings used in connection with sprinkler systems shall be as prescribed by fire code official
Alarms	903.4.2	Approved audible devices shall be connected to every sprinkler system.
Floor control valves	903.4.3	Indicating control valves shall be provided at riser connections on each floor of high-rise

Section	Requirements
	No related section
18.3.5.5	Required in health care occupancies.
	No related section
	No related section
	No related section
9.7.1.2	Sprinkler piping serving not more than 6 sprinklers is permitted to be connected to domestic water supply system with capacity to provide 0.15 gpm to area
	No related section
	No related section
	No related section

**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
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Section	Requirements
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**Alternative automatic fire-extinguishing systems**

Where required	904.2	Fire extinguishing system shall be approved by fire code official
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9.7.3.1	Where extinguishment or control of fire is accomplished by extinguishing system, system shall be installed in accordance with appropriate standard
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**Standpipe systems**

General	905.1	Shall be provided in new buildings. Fire hoses and threads used in connection with standpipes shall be compatible with fire dept. connections
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9.7.4.2	Standpipe shall be in accordance with NFPA 14
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Required installations	905.3	Installed where required in accordance with NFPA 14. System can be combined with sprinklers. Class III standpipes installed where highest level is 30 ft above or below fire department access
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11.8.2.2	Class I required in high rise
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Location of Class I standpipe hose connections	905.4	Connections provided: 1) in every required stairway, 2) each side of horizontal exit, 3) exit passageway, 4) covered mall building (not applicable), 5) at roof when slope is less than 4:12 located at roof of stairway landing, 6) remote portion of non-sprinklered floor
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	No related section
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Location of Class II standpipe hose connections	905.5	In assembly occupancies with occupant loads > 1,000, hose connections shall be on each side of a stage, on each side of the rear of an auditorium. Class II hose connections shall be in accordance with Section 905.5
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	No related section
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**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
Location of Class III standpipe hose connections	905.6	Class III standpipe systems shall have hose connections located as required for Class I systems and in accordance with Section 905.5 and 905.6
Cabinets	905.7	Cabinets containing fire-fighting equipment shall not be blocked from use or obscured from view
Dry standpipes	905.8	Shall not be installed
Valve supervision	905.9	Shall be supervised in the open position except valves to underground key or hub valves and valves locked in normal position and inspected
During construction	905.10 directing to 3311	Buildings over three stories shall have at least one standpipe installed a max. of 40 ft above fire dept. access.
<b>Portable extinguishers-General</b>	<b>906</b>	<b>Must comply with IFC</b>
<b>Fire Alarm and Detection Systems</b>	<b>907</b>	
Construction documents	907.1.1	Documents must be reviewed before system installation
Group B	907.2.2	Install system if occupant load is 500 or more, or if more than 100 persons above or below exit discharge level
Manual fire alarm boxes location	907.3.1	Shall not be more than 5 ft from entrance to each exit. Travel distance to nearest box should not exceed 200 ft

Section	Requirements
	No related section
	No related section
	No related section
43.6.4.4	Building shall be provided with standpipe system up to and including highest work area floor
<b>9.7.4.1</b>	<b>Where required by the sections in this code, portable extinguishers shall be installed, inspected and maintained in accordance with NFPA 10</b>
	No related section
38.3.4.1	System shall be provided if building is two or more stories above exit discharge level, or there are 50 or more occupants above or below level of exit discharge, or occupant load > 300
9.6.2.3	Shall be provided in natural exit access path near each exit

INTERNATIONAL BUILDING CODE 2006		
Title	Section	Requirements
Height	907.3.2	Shall be between 42 and 48 inches
Power Supply	907.4	Primary and Secondary power shall be provided per NFPA 72
Wiring	907.5	Shall comply with NFPA 72 and ICC Electric Code
Presignal system	907.7	Prohibited unless approved by fire code official and fire department, and where 24 hr supervision is provided
Employee work areas	907.9.1.2	Notification circuits require 20% spare capacity
Groups I-1 and R-1	907.9.1.3	Provided with visible alarm notification appliance activated by in-room smoke alarm and building fire alarm system
Access	907.12	Shall be provided to each detector for inspection, maintenance and testing
<b>Emergency Alarm Systems</b>	<b>908</b>	
Analysis	908.4	Rational analysis supporting design, including type of system, method of operation and construction methods must be developed
<b>Smoke Control Systems</b>	<b>909</b>	
Smoke barrier construction	909.5	Shall comply with 709 and constructed to limit leakage
Pressurization method	909.6	Primary mechanical means is by pressure difference across smoke barriers.
Exhaust method	909.8	Approach permitted for large enclosed volumes when approved by building official
Design Fire	909.9	Shall be based on rational analysis

NFPA 101 2006	
Section	Requirements
	No related section
	No related section
	No related section
	Not permitted in project relevant occupancies.
	No related section
8.6.7(5)	Atrium permitted if engineering analysis shows smoke layer maintained 6 ft above highest floor level for a period of 1.5 times the egress time or 20 mins., whichever is greater
	No related section

INTERNATIONAL BUILDING CODE 2006		
Title	Section	Requirements
Equipment	909.10	Equipment must be suitable for intended use and probable exposure temps
Power systems	909.11	Two sources of power required: primary power from normal building power system and secondary power from a source complying with ICC Electric Code
Engineered ventilation system	909.20.4.2.1	Min. of 90 air changes required per hour exhaust from vestibule and sized for three vestibule simultaneously
Stair pressurization alternative	909.20.5	If fully sprinklered, vestibule not required if stair pressurization is between 0.15 and 0.35 in. with all doors closed under max. stack effect
Standby Power	909.20.6.2	Mechanical vestibule, shaft ventilation systems, and detection systems shall be powered by approved standby power system per Ch 27
<b>Smoke and Heat Vents</b>	<b>910</b>	<b>Smoke and heat vents, or mechanical smoke exhaust systems and draft curtains shall conform to the requirements of section 910</b>

NFPA 101 2006	
Section	Requirements
	No related section
	No related section
	No related section
7.2.3.9.1	Design pressure of not less than 0.5 in. in sprinklered buildings
7.2.3.12	Generator required in 1 hr rated room with 2 hr fuel supply
	<b>Covered by NFPA 204 M</b>

## Means of Egress

The Means of Egress section of this document will also compare the two codes by addressing the differences between them rather than iterate all the areas in which they are alike. The IBC discusses the Means of Egress in one chapter (chapter 10) for all occupancies. The NFPA 101 addresses Means of Egress in general terms in one chapter (chapter 7) and then provides additional Means of Egress requirements in each chapter of the individual occupancies. Some of the variations between the two codes are minor; others are extensive and ultimately result in major design differences for a building.

There are components addressed by each code in the respective chapters and sections that make up the Means of Egress. These include, but are not limited to occupant loading, egress width, accessible egress, doors, stairways, ramps, travel distance, corridors, number of exits, and exit passageways. This document comparison will start with definitions and continue with the differences between the codes with respect to the components of Means of Egress.

- **Definitions:** Some of these extensive differences can first be found in the definitions sections of the chapters. All differences are listed below, but the one impacting design and Life Safety would be that found in the IBC as 'Level of Discharge'. It is defined as that level in which the exit discharge is located. The NFPA 101 (3.3.72.1) describes it as being the lowest level having at least 50% of the number of exits and exit capacity discharging to the exterior or the story with the least change in elevation of grade. This difference could become problematic if one code requirement were to be combined with the other code requirement.
- **General Requirement:** The general requirements include such items as ceiling height, protruding objects, head room and floor surface. There are minor differences, but the item that will affect the design of some buildings the most is that related to ceiling height/head room. Both the IBC and the NFPA 101 require a minimum of 7'-6" in ceiling height. Both allow projections into the minimum ceiling height to 6'-8" above finished floor, but the IBC allows 50% of the ceiling to be less than 7'-6". The NFPA 101 requires a stricter 2/3 of the ceiling area to be at least 7'-6".
- **Occupant Load:** Both codes provide an occupancy load table to provide guidance in calculating the loading of building for egress capacity. The IBC load table is Table 1004.1. The NFPA 101 load table is Table 7.3.1.2. The outstanding difference between the two occupant loads is in how each code directs the application of the loading factors. The IBC code states the loading be applied to each portion of the building based on occupancy of each portion. The most restrictive requirements are to be applied to only the portion of the egress system that is used by more than one occupancy. The NFPA 101 also requires the loading be based on each type of occupancy, but requires the restrictive condition of applying the Means of Egress, type of construction and other safeguards of the most restrictive occupancy to the entire building.

- **Egress Width:** Both codes provide tables for calculating the width/capacity of the elements of the Means of Egress. The IBC width table is Table 1005.1. The NFPA 101 table is Table 7.3.3.1. The differences between these two tables will profoundly affect the design of the exiting elements of buildings. As a sample of the differences, the IBC requires 0.20 inches per occupant in sprinklered buildings for stairways and 0.15 inches for other components. The NFPA 101 requires 0.30 inches per occupant in sprinklered buildings for stairways (a 50% increase over the IBC) and 0.20 inches for other components (a 33% increase over the IBC).
- **Accessible Means of Egress:** While both codes require an accessible Means of Egress to accessible spaces, the NFPA 101 provides an exemption for health care occupancies that are provided with an automatic sprinkler protection. An elevator is required as one Means of Egress in both codes in buildings of more than four stories. The IBC provides for an exception in fully sprinklered buildings with horizontal exiting and ramps. The NFPA 101 provides no such exception. Other more minor differences between the two codes are listed in the chart portion of this section.
- **Stairways:** The differences between the two codes with respect to stairway construction requirements are minor in nature. They are listed in the chart portion of this section.
- **Ramps:** The major difference between the ramp components of the two codes is that of width. The IBC requires a minimum of 36 inches, while the NFPA 101 requires a 44 inch minimum.
- **Handrails and Guards:** The differences are minor: 1 inch less encroachment allowed in the NFPA 101. Wood handrails/guards are allowed in any occupancy of the IBC. The NFPA 101 does not allow them in Types I and II construction.
- **Common Path of Travel:** Both codes have requirements of common path of travel to an exit and both provide additional allowances for sprinklered buildings. These distances are similar with the NFPA 101 being somewhat more restrictive in some cases and the IBC in others.
- **Corridors:** Both codes require 8'-0" wide minimum corridors in Health Care facilities in the areas where bed movement is anticipated. The IBC restricts dead-end corridors to 20 feet except in Business occupancies which may not exceed 50 feet. The NFPA 101 restricts all dead-end corridors to 30 feet.
- **Vertical Exit Enclosures:** The major difference between the codes in this component is that of a smoke-proof enclosure for stairways. The IBC is more stringent in that it requires the smoke-proof enclosure for both high-rise and some underground structures. The NFPA 101 only requires the enclosures in underground structures.
- **Exterior Exit Ramps and Stairways:** These exterior exit components are allowed in both codes; however, the IBC does not allow their use in I-2 (hospitals) facilities exceeding 75 feet in height or over 6 stories. The NFPA 101

has no such restriction. Additionally the way the open side of the component is handled is different in each code.

- **Exit Discharge:** The IBC devotes an entire section to this requirement and is concerned with width, location, fire rating and other items. The NFPA 101 only requires that all occupants have safe access to a public way.
- **Assembly:** In the IBC, Group A facilities exceeding 300 persons are required to provide at least 50% of the exit capacity out the main entrance. All Assembly facilities must meet this requirement in the NFPA 101. There is a major difference in the maximum travel distance required. The IBC requires 200 feet for non-sprinklered facilities and 250 feet for sprinklered. The NFPA 101 is less at 150 feet for non-sprinklered facilities and 200 feet for sprinklered. It is the same (400 feet) for smoke-protected facilities in each code. There are some minor differences in calculating the width of aisles in the Assembly occupancy for each code.

INTERNATIONAL BUILDING CODE 2006		
Title	Section	Requirements
<b>Administration</b>	<b>1001</b>	<b>Altered to</b>
Minimum Requirements	1001.2	Egress cannot be reduced below that required in the code.
Maintenance	1001.3	The International Fire Code dictates how exits are to be maintained.
<b>Definitions</b>	<b>1002</b>	
Aisle		An exit access component that defines and provides a path of egress travel.
Alternating Tread Device		Device used to change levels
Area of Refuge		Location where people unable to use stairs can wait for instruction or rescue.
Egress Court		Court or yard through which one or more exits leads to a public way.
Floor Area, Gross		Floor area inside exterior walls (excluding vent shafts and courts) without deducting any other floor area including columns and thickness of interior walls. If no enclosing walls, usable space under roof.
Level of Exit Discharge		The level at which the exit discharge is located.
<b>General Means of Egress</b>	<b>1003</b>	
Ceiling Height	1003.2	Minimum ceiling height of means of egress is 7 feet. Exceptions based on other code requirements for sloped ceilings, ceilings in dwelling units, projections, stair headroom, and doors.

NFPA 101 2006	
Section	Requirements
<b>7.1.1</b>	<b>Application</b>
	No related section
	No related section
	No related section
7.2.11	Yes, in LSL
3.3.1	Defines areas of refuge and accessible areas of refuge.
3.3.18	NFPA 101 implies that there can be areas of refuge that are not accessible.
3.3.18.1	No related section
3.3.109	Similar; does not address floor area without enclosing walls.
3.3.72.1	Lowest level having at least 50% of the number of exits and capacity of exits discharging to the exterior at grade or the story with the least change in elevation to grade provided no other story has 50% of its exits or egress capacity discharging to the exterior at grade.
7.1.5	Requires seven feet, six inches, but allows projections from ceiling to a height of six feet, eight inches. Requires that 2/3 of the ceiling be seven feet, six inches. Seven feet allowed for existing buildings.

**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
Protruding Objects.	1003.3	Projections into the means of egress must comply with this section.
Headroom	1003.3.1	Objects can extend below the ceiling as long as a clear height of 80 inches is provided and no more than 50% of the ceiling area is reduced in height. Door closers can be as low as 78 inches from the floor.*
Free-Standing Objects	1003.3.2	Objects mounted on posts or pylons can project up to 12 inches when the leading edge of the projection is more than 27 inches and less than 80 inches above the floor.
Horizontal Projections	1003.3.3	Elements cannot project over a walking surface more than four inches when they are located between 27 and 80 inches above the floor. Handrails can project up to four and a half inches from the wall.
Clear Width	1003.3.4	The clear width of an accessible route cannot be reduced by protruding objects.
Floor Surface	1003.4	Floor surfaces required to be securely attached and slip-resistant.
Elevation Change	1003.5	When change in elevation is less than 12 inches, must use sloped surface. Provides exceptions for steps and aisles based on occupancy and other conditions.
<b>Occupant Load</b>	<b>1004</b>	

Section	Requirements
7.1.5	Requires seven feet, six inches, but allows projections from ceiling to a height of six feet, eight inches. Requires that 2/3 of the ceiling be seven feet, six inches. Seven feet allowed for existing buildings.
7.2.2.2.1.1 *	Requires seven feet, six inches, but allows projections from ceiling to a height of six feet, eight inches. Requires that 2/3 of the ceiling be seven feet, six inches. Seven feet allowed for existing buildings. Headroom in industrial equipment access areas must meet NFPA Chapter 40. No related section
7.2.1.2.3	Allows up to a four inch projection from the hinge side of doors between 34 and 80 inches above floor. No related section
7.1.6.4	Required to be uniformly slip-resistant under foreseeable conditions.
7.1.7	Changes in level less than 21 inches are to be by ramp or stair. If a stair is used, the minimum tread depth is 13 inches, with the exception of industrial occupancies.

INTERNATIONAL BUILDING CODE 2006										
Title	Section	Requirements								
Design Load	1004.1	Number of people the egress system is designed to accommodate.								
Maximum Floor Area Allowances Per Occupant	Table 1004.1.1	<p>Loading is by table 1004.1.1 Exception: Where approved by Building Official</p> <table border="0"> <tr> <td>Accessory Storage</td> <td>300</td> </tr> <tr> <td>Locker room</td> <td>50</td> </tr> <tr> <td>Parking garage</td> <td>200</td> </tr> <tr> <td>Warehouse</td> <td>500</td> </tr> </table>	Accessory Storage	300	Locker room	50	Parking garage	200	Warehouse	500
Accessory Storage	300									
Locker room	50									
Parking garage	200									
Warehouse	500									
Increased Occupant Load	1004.2	Allows the occupant load to exceed the number based on Table 1004.1.1, provided the occupant load does not exceed one person per seven square feet and code requirements for egress are met.								
Outdoor Areas	1004.8	Outdoor areas used by occupants must be provided with exits based on the requirements of the code. Occupant load is to be assigned by the building official based on anticipated usage. Exceptions provided for areas used exclusively for service of the building.								
Multiple Occupancies Egress	1004.9	Egress requirements must be applied to each portion of the building based on the occupancy. The most restrictive requirements are to be applied to portions of the egress system that are used by more than one occupancy.								
<b>Egress Width</b>	<b>1005</b>	<b>Table 1005.1</b>								

NFPA 101 2006	
Section	Requirements
3.3.144.2	Total number of persons that might occupy a building or portion of a building at anyone time
Table 7.3.1.2	<p>Similar; some differences in loading factors for various uses. Refers to NFPA 12.1.7.2 and 13.1.7.2 for loading of waiting areas in assembly occupancies. Storage in other storage or mercantile 500</p> <p>None Listed</p> <p>No requirement 4.2.8.1.7</p> <p>None Listed</p>
7.3.1.3.1 7.3.1.3.2 12.1.7.1 13.1.7.1	Limits only the maximum density of occupants in assembly occupancies.
	No related section
Non-separated 6.1.14.3.2 *	The means of egress, type of construction protection and other safeguards in the building shall comply with most restrictive.
	<b>Table 7.3.3.1</b>

**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
Door Encroachment	1005.2	Doors swinging into a path of travel can not reduce the required egress width by more than 50%. A door may project up to seven inches into the required egress width when fully open.
<b>Accessible Means of Egress</b>	<b>1007</b>	
Accessible Means of Egress Required	1007.1	Accessible means of egress required for accessible spaces. When more than one exit is required from the space, each accessible area must access two means of egress. Alterations to existing buildings need not comply.
Elevators Required	1007.2.1	An elevator is required as one accessible means of egress when accessible floors are located four or more stories above or below the level of exit discharge. Exceptions are provided for fully sprinklered buildings with horizontal exiting and ramps.
Exit Stairways	1007.3	Enclosed stairways must have clear width of 48 inches and meet requirements for providing an accessible area of refuge. Exceptions made for stairways in fully sprinklered buildings, serving a single guestroom, and in open parking garages.
Platform Lifts	1007.5	Platform lifts may not be part of accessible means of egress unless complying with Section 1109.7.
Area of Refuge	1007.6	Required areas of refuge must have accessible means of egress and meet requirements for maximum travel distances. Direct access must be provided to enclosed stairway or elevator.

Section	Requirements
7.2.1.4.4	Similar; exception for existing buildings does not limit the obstruction during the swing of a door.
7.5.1.1.1	Exceptions exempt health care occupancies that are provided with automatic sprinkler protection.
7.5.4.7	No exceptions for stories of sprinklered buildings with horizontal exits or ramps.
7.5.4.4 7.2.12.2.3	Exceptions may apply based on the use of horizontal exits and existing stairs.
	No related section
7.5.4.9	Stories of buildings that are fully sprinkler-protected are exempt. See NFPA 7.2.12.1.

INTERNATIONAL BUILDING CODE 2006		
Title	Section	Requirements
Separation	1007.6 .2	Separation required from the remainder of the building by smoke barriers unless within a stairway enclosure or in fully sprinklered buildings.
Signage	1007.7	Signs are required to identify the location of accessible means of egress at elevators and exits that provide access to an accessible area.
Exterior Area for Assisted Rescue	1007.8	Exterior areas for assisted rescue must be open to the outside.
Openness	1007.8 .1	Requires 50% openness of exterior area of refuge.
<b>Doors, Gates and Turnstiles</b>	<b>1008</b>	
Size of Doors	1008.1 .1	Minimum clear width of door openings is 32 inches, and maximum width of a door leaf is 48 inches. If two leaves, at least one must provide 32 inch clear width. Minimum door height is 80 inches. Doors in Group I-2, used for movement of beds shall provide a clear width not less than 41.5 inches.
Special Doors	1008.1 .3	Provides criteria for special doors and grilles.
Revolving Doors	1008.1 .3.1	Revolving doors must be able to fold tightly and must provide egress path 36 inches wide. Location and revolution requirements also addressed.
Egress Component	1008.1 .3.1.1	Identifies additional criteria for revolving doors when they are used as part of the means of egress. Maximum of 50% of the egress capacity is counted, and the collapsing force cannot exceed 130 pounds applied within three inches of the edge.

NFPA 101 2006	
Section	Requirements
7.2.12.3.4	Allows the continued use of existing 30-minute fire-rated partitions to create the separation.
	No related section
	No related section
	No related section
7.2.1.2.4	Additional Exceptions include: exit access doors serving a room not exceeding 70 sq.ft. and not required to be accessible to person with severe mobility impairments shall be not less than 24 in.; doors serving a building or portion thereof not required to be accessible to persons with severe mobility impairments shall be permitted to be 28 inches.
	No related section
7.2.1.10.3	Includes an exception that exempts the requirement for swinging door within 10 feet of the revolving door under specific conditions.
7.2.1.10.2	Similar; also allows the specific occupancy chapter to allow use of revolving doors as an egress component.

**INTERNATIONAL BUILDING CODE 2006**

**NFPA 101 2006**

Title	Section	Requirements
Power-Operated Doors	1008.1 .3.2	Power-operated doors must be capable of opening manually if there is a power failure. Maximum force to open must comply with Section 1008.1.2.
Horizontal Sliding Doors	1008.1 .3.3	Horizontal sliding doors may be used as part of means of egress (except in Group H), if meeting requirements for opening and fire protection.
Access-Controlled Egress Doors	1008.1 .3.4	Entrance doors may use control system if equipped with sensors and unlocking features meeting specific requirements.
Security Grilles	1008.1 .3.5	Security grilles may be used in Groups B and S if easily opened in an emergency. No more than half of required means of egress may have grilles.
Landings at Doors	1008.1 .5	Landings must be at least as wide as the stairway or door. Doors must not reduce the landing size by more than 50% in any part of the swing. Landing length must be at least 44 inches. Provides specific exceptions based on occupancy.
Thresholds	1008.1 .6	Maximum height of thresholds is 0.75 inches for sliding doors in dwelling units, and 0.5 inches for other doors. Thresholds exceeding 0.25 inches must be beveled.
Hardware Height	1008.1 .8.2	Door hardware must be between 34-48 inches above floor surface. Security locks may be at any height.

Section	Requirements
7.2.1.9.1	Similar; requires signage instructing occupants to push or slide doors open in an emergency, depending on the style of door.
7.2.1.14	Similar; less comprehensive.
7.2.1.6.2 12.2.2.2.5 13.2.2.2.5 18.2.2.2.4 19.2.2.2.4 20.2.2.2 21.2.2.2 32.3.2.2.2 33.3.2.2.2 38.2.2.2.5 39.2.2.2.5 42.2.2.2.3	Chapters 18, 19, 32 and 33 permit only one access control egress door in each egress path*
7.2.1.4.1 36.2.2.2.6 37.2.2.2.6 38.2.2.6 39.2.2.6	Requires signage at grilles indicating they are to remain open when the building is occupied. Security grilles are only allowed in business occupancies.
7.2.1.3	Similar; exceptions are made for existing buildings.
7.2.1.3	Limits the height of a threshold to one-half inch.
7.2.1.5.9.3	Similar; includes exception for egress doors in individual dwelling units. Limits the height of security devices.

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Title	Section	Requirements
Locks and Latches	1008.1 .8.3	Egress doors must be operable from inside without a key or special knowledge. Exceptions based on occupancy and arrangement are provided.
Bolt Locks	1008.1 .8.4	Bolt locks are prohibited, except for use on exits from individual dwelling units and inactive leaves of pairs of doors to storage rooms.
Panic and Fire Exit Hardware	1008.1 .9	Panic and fire exit hardware is required in Group A occupancies with an occupant load of 100 or more. Maximum opening force permitted is 15 pounds.
Gates	1008.2	Gates used as part of the egress system must comply with requirements for doors. Gates in fences surrounding a stadium are allowed to exceed the 48 inch maximum leaf width.
Turnstiles	1008.3 *	Turnstiles must not obstruct egress. If they operate in the direction of egress, they may egress up to 50 people if the specific provisions of this section are met.
<b>Stairways</b>	<b>1009</b>	
Stairway Width	1009.1	Requires a minimum stairway width of 44 inches. Exceptions are provided for stairways serving an occupant load of 50 or less (36 inches), spiral stairways, and aisle stairs.

Section	Requirements
7.2.1.5.1 7.2.1.5.5 18.2.2.2.2 18.2.2.2.3 18.2.2.2.4 19.2.2.2.2 19.2.2.2.3 19.2.2.2.4 22.2.11.2 23.2.11.2 36.2.2.2.2 37.2.2.2.2 38.2.2.2.2 39.2.2.2.2	Similar; exceptions are provided for health care and detention occupancies. Occupancy chapters also allow locking of exterior doors under specific conditions, such as in mercantile and business occupancies.
	No related section
7.2.1.7 12.2.2.2.3 13.2.2.2.3	Similar; NFPA occupancy chapters identify when panic hardware is required.
	No related section
7.2.1.11.1	Cannot be used in assembly occupancy 50% capacity. Each restricted. To 50 people. Exception allows their use in business occupancies because they allow the use of revolving doors for egress.
7.2.2.1 Table 7.2.2.2.1(a) 7.2.2.2.1(b)	Similar; provides requirements for new and existing stairs.

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Title	Section	Requirements
Stair Treads and Risers	1009.3	Riser height limited to between 4 and 7 inches. Treads must be at least 11 inches deep.
Stairway Construction	1009.5	Material must be consistent with the type of construction. Wood handrails are permitted in any type of construction.
Alternating Tread Device	1009.9	Alternating tread devices may only be used as part of the means of egress in specified occupancies, including mezzanines in Groups F, H, and S provided they are 250 square feet or less and serve no more than five people, and I-3 guard towers and similar facilities.
Treads of Alternating Tread Devices	1009.9.2	Establishes minimum tread depths, widths, and projection. Sets riser height maximum of 9.5 inches.
<b>Ramps</b>	<b>1010</b>	
Slope	1010.2	Ramps used for egress must have a maximum slope of 1:12, and other ramps, 1:8.
Vertical Rise	1010.4*	Maximum rise of a ramp is 30 inches between landings.
Minimum Dimensions	1010.5	Criteria for dimensions for ramps must comply with this section.
Width	1010.5.1	Requires 36 inches clear width minimum for means of egress ramps. Must not be narrower than width required for corridors (Section

Section	Requirements
7.2.2.2.1 Table 7.2.2.2.1(a) Table 7.2.2.2.1(b)	Same for new stairs only. Existing stairs are allowed up to eight-inch risers, and treads as small as nine inches. Continued use of existing stairs is based on occupancy.
7.2.2.3.1.1 7.2.2.3.1.2	Required to be of permanent fixed construction. Stairs in Types I and II must be of noncombustible construction. No exception made for handrails.
7.2.11.1	Similar; use limited to access to unoccupied roofs, second means of egress from storage elevators per NFPA Chapter 42, means of egress from towers and machinery platforms when serving a maximum of three occupants, and as a second means of egress from boiler rooms or similar spaces when the maximum occupant load is three people.
7.2.11.2*	Similar; design criteria is more detailed.
7.2.5.1 7.2.5.2 Table 7.2.5.2(a) Table 7.2.5.2(b)	Exceptions allow greater slopes for assembly occupancies and existing ramps when approved by AHJ.
7.2.5.2 Table 7.2.5.2(a)	Shall not apply to industrial equipment access areas, assembly occupancies, or ramps providing access to vehicles, vessels, mobile structures, and aircraft. No related section
7.2.5.2 Table 7.2.5.2(a) Table 7.2.5.2(b)*	Requires 44 inch minimum width for new ramps.

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Title	Section	Requirements
		1017.2).
Restrictions	1010.5 .3	Ramps must not be reduced in width in the direction of exit travel. Doors must not reduce the clear width to less than 42 inches. Projections are not allowed into the required ramp or landing width. (handrail 4.5" 1012.7)
Length	1010.6 .3	Landings must be at least 60 inches.
Change in Direction	1010.6 .4	Landings that provide for change in direction between ramp runs must be at least 60 inches by 60 inches.
Ramp Construction	1010.7	Material must be consistent with the type of construction. Wood handrails are permitted in any type of construction.
Handrails	1010.8	Handrails required on both sides for ramps with rise exceeding six inches.
Edge Protection	1010.9	Protection required for ramps. Provides three exceptions.
Curb, Rail, Wall or Barrier	1010.9 .1	Opening along edge of ramps limited to four inches within four inches of the ground.
<b>Exit Signs</b>	<b>1011</b>	
Where Required	1011.1	Exit signs must comply with this section.
Exit Sign Illumination	1011.5 .2	Exit signs must be illuminated and meet requirements for foot-candle levels. An exception is provided for self-luminous exit signs and tactile signs.
<b>Handrails</b>	<b>1012</b>	
Projections	1012.7	Four and a half inches maximum projection allowed at or below handrail height.
<b>Guards</b>	<b>1013</b>	

Section	Requirements
Table 7.2.5.2(a)	Three and a half inches allowed to project on each side at or below handrail height.
7.2.5.3.2	Similar; existing approved landings are excepted.
7.2.5.3.2.6	All landings are required to be 60 inches long in the direction of travel. No decrease in width permitted except in existing conditions.
7.2.5.3.1*	Required to be permanent fixed construction. Stairs in Types I and II must be noncombustible. No exception for handrails.
12.2.5.6.8	Ramped aisles in assembly occupancies having a gradient exceeding 1 in 20 shall be provided with handrails at one side or along the centerline.
7.2.5.3.3	Requires curbs, walls, railings, or projecting surfaces at edges of ramps.
7.2.5.3.3	If curbs or barriers are used as edge protection, they are required to be not less than four inches.
7.10.1.1	Requires exit signage when required by specific occupancy chapters.
7.10.5.1	Similar; less comprehensive.
7.10.5.2	Refers to NFPA 7.8 for illumination.
7.3.2*	Maximum projection of three and a half inches at or below handrail height.

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Where Required 1013.1 Guards required at open-sided walking surfaces more than 30 inches above the adjacent floor or grade in compliance with Section 1607.7

7.2.5.4 Similar; exceptions provided for assembly occupancies.

**Exit Access 1014**

**7.5 Arrangement of Means of Egress**

General 1014.1 Requires compliance with Sections 1014 through 1003 and applicable provisions of Sections 1003 through 1013.

No related section

**Exit and Exit Access Doorways 1015**

Exit or Exit Access Doorways Required 1015.1 Two exits are required from a space if occupant load exceeds Table 1015.1

7.4.1.1 Two exits required from any portion of a building. Exception allows for one exit when permitted by an occupancy chapter. Single exit allows for balconies and mezzanines when the common path of travel limitations of occupancy chapters are met.

Boiler, Incinerator, and Furnace Rooms 1015.3 Rooms greater than 500 square feet with equipment exceeding 4000,000 BTUs require two exits separated by half the maximum dimension of the room. The second exit can be fixed ladder or alternating tread device.

No provision for room size and max. BTUs.

Two Exits or Exit Access Doorways 1015.2 .1 Separation of exits must be half the maximum diagonal dimension of the space or building. Exceptions allow for measurement along the path in a corridor if it is 1-hour fire-rated. Separation is reduced to 1/3 the diagonal if the building is sprinklered.

7.5.1.3.2 Similar; also makes an exception for existing buildings.

**Exit Access Travel Distance. 1016**

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Title	Section	Requirements
Exterior Egress Balcony Increase	1016.3	Allows an increase of maximum travel distance of up to 100 feet when the last portion of travel is on an exterior egress balcony.
Exit Access	1014	
Common Path of Egress Travel	1014.3	Exceptions allow up to 100 feet based on occupancy and sprinkler protection.  Business <30 people Unsprinklered 100 ft Low Hazard Storage Unsprinklered 75 ft Low Hazard Storage Sprinklered 100 ft Ordinary Hazard Storage Unsprinklered 75 ft Parking Structures Unsprinklered 75 ft Institutional Unsprinklered 75 ft Institutional Sprinklered 100 ft
Multiple Tenants	1014.2 .1	Requires access to exits by all tenants without having to pass through another tenant's space
Group I-2	1014.2 .2	Each habitable room or suite must have an exit access door directly to a corridor. Provides exceptions to allow egress through intervening rooms. Limits the size of suites and travel distances.
Aisles	1014.4	Unobstructed aisles are required for exit access in areas with seating and displays. Doors and handrails cannot project into the required width by more

Section	Requirements
7.5.3	Provides criteria for exterior exit access, but does not provide increases for travel distance.
12.2.5 13.2.5 23.2.5 28.2.5 29.2.5 30.2.5 31.2.5 32.3.2 33.3.2 36.2.5 37.2.5 38.2.5 42.2.5	Common path of travel requirements vary by occupancy. NFPA appendix Table 7.6.1 provides summary of requirements by occupancy.  75 ft  No Requirement  No Requirement  50 ft  50 ft  No Requirement  No Requirement No related section
18.2 19.2	Includes detailed requirements for egress in new and existing health care facilities.
7.3.4.1 18.2.3.4	Aisles required for exit access shall not be less than 8 ft in clear width unless the minimum corridor width is 6 ft and projections do not exceed 6 inches.

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than seven inches.

Aisles in Groups B	1014.4 .1	Requires 36-inch minimum aisle width when furniture and fixtures are on one side, and 44 inches when they are on both sides of the aisle. Exception for nonpublic aisles, 28 inches allowed when serving less than 50 people and the area is not required to be accessible.	7.3.4.1 36.2.5.5 36.2.5.6 37.2.5.5 37.2.5.6	NFPA 7.3.4.1 provides minimum widths for means of egress and refers to the occupancy chapters. Aisle requirements are focused on assembly occupancies.
Nonpublic Areas		Included in exception for 1014.4.1	7.3.4.1	NFPA 7.3.4.1 provides minimum widths for means of egress and refers to the occupancy chapters. Aisle requirements are focused on assembly occupancies.
Table and Seating Accessway Length	1014.4 .3.3	Requires maximum of 30 feet until reaching exit paths.	12.2.5.7.4	Requires 36 feet maximum from a seat to an aisle or egress doorway.
<b>Corridors Construction</b>	<b>1017</b> 1017.1	Corridors within I-2 occupancy, serving more than 10 persons is not required to have a fire resistance rating when equipped with automatic sprinklers.	7.1.3.1 18.3.6.2.2	Exit access corridors must be separated from other spaces by 1-hour fire-rated construction when serving 30 or more people. Exception: No fire-resistance required for health care occupancies. No related section
Corridor Fire-Resistance Ratings	Table 1017.1	Identifies the required fire rating of corridors based on occupancy, occupant load, and whether the building is sprinklered.		
Corridor Width	1017.2	Requires minimum width of at least 44 inches. Exception: 96 inches in Group I-2 areas where required for bed movement	7.3.4.1 18.2.3.4	Not less than 8 ft in width unless minimum corridor width is 6 ft.
Dead Ends	1017.3	Corridors must not have dead ends greater than 20 feet long. Exceptions for Group B.	18.2.5.2	Dead-end corridor shall not exceed 30 ft

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Air Movement in Corridors	1017.4	Corridors may not be used as air ducts or plenums. Exceptions allow the use of the corridor for makeup air to rooms opening into it under specific conditions. The space above the ceiling may be used as a plenum under specific conditions.
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	No related section
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Corridor Continuity	1017.5	Rated corridors must be continuous to an exit without intervening rooms. Exception: Foyers, lobbies and similar spaces required for the corridor cannot be construed as intervening rooms.
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7.5.1.2	Exception: Corridors not required to be rated are permitted to discharge into open floors
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**Exits 1018**

Exterior Exit Doors	1018.2	Requires at least one door to comply with Section 1008.1.1, which provides requirements for door size.
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	No related section.
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Detailed Requirements	1018.2 .1	Requires compliance with Section 1008.1.
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	No related section.
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Arrangement	1018.2 .2	Exterior exit doors must lead to exit discharge or public way.
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	No related section.
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General	1018.1	Requires compliance with Sections 1018 through 1023 and Sections 1003 through 1013 as applicable. Use of exits for any purpose that would interfere with egress is prohibited. The protection of an exit cannot be reduced once it is established.
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	No related section.
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**Numbers of Exits and Continuity 1019**

Helistops	1019.1 .2	Requires at least two exits. Landing area less than 60 feet long or less than 2000 square feet can utilize a fire escape or ladder for the second exit.
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	No related section.
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Buildings with One Exit	1019.2	Group I occupancy is permitted to have one exit if it is one story above grade with a maximum of 10 occupants per floor and
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7.4.1.1 directing to 18.2.4	Not less than 2 exits shall be provided for each floor of the building
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travel distance of 75 ft

No related table

Buildings with One Exit	Table 1019.2	Table is the companion to Section 1015.1
<b>Vertical Exit Enclosures</b>	<b>1020</b>	
Enclosures Required	1020.1	Exit stairs within buildings must be enclosed and have fire rating of two hours if four or more stories. Rating of one hour permitted for fewer stories. Provides exceptions based on occupancy and other conditions.
Stairway Floor Number Signs	1020.1.6	A sign is required at each landing of stairways serving more than three stories. Information must include floor level, stairway, top and bottom levels of stairway, access to roof, and direction to exit discharge.
Smoke-Proof Enclosures	1020.1.7	Required for stairways in high-rise and underground structures that serve stories located 75 feet above fire department vehicle access or 30 feet below exit discharge.
<b>Exit Passageway</b>	<b>1021</b>	
Exit Passageway - Width	1021.2	Width must be at least 44 inches. Exception: if serving occupant load less than 50, minimum width may be 36 inches. Width must be unobstructed.
Construction	1021.3	Requires minimum 1-hour fire-rated construction, but not less than that of exit enclosures to which it is connected.
Openings and Penetrations	1021.4	Openings into exit passageways are limited to those required for egress. When exit passageways are used to provide egress for enclosed stairways, a fire-rated door is required to

7.1.3.2.1  
7.1.3.2.3  
28.2.2.1.2  
29.2.2.1.2  
30.2.2.1.2  
31.2.2.1.2

Similar; exceptions made for existing buildings when sprinklered. Disallows use of exit enclosure for any other purpose.

7.2.2.5.4 Required for enclosed stairs serving five or more stories.

7.2.3.1 Only required for exits in underground structures.

7.2.6.4 Required to accommodate the aggregate width of all exits served by the passageway.

7.2.6.2  
7.1.3.2 Requires the same fire-rated construction and opening protection as stair enclosures.

7.2.6.2  
7.1.3.2 Requires the same fire-rated construction and opening protection as stair enclosures. Exceptions allow fire windows and existing wired glass.

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separate the stairway enclosure from the passageway. Elevators are not allowed to open into exit passageways.

Penetrations 1021.5 Penetrations into exit passageways other than for equipment serving the passageway are not allowed. Must comply with Section 712.

7.2.6.2 Requires the same fire-rated construction and opening protection as stair enclosures.  
6.1.3.2

**Exterior Exit Ramps and Stairways 1023**

General 1023.1 Requires compliance with this section. Exceptions made for exterior stairways serving stadiums where all portions of the egress are outside.

7.2.2.6 Outside stairs allowed to lead to roof or other building sections where construction is fire-resistive and path leads to egress

Use in a Means of Egress 1023.2 Exterior exit stairs are not allowed for egress from Group I-2 or for buildings more than 75 feet in height or exceeding six stories.

7.2.2.6.2 Does not limit use.

Open Side 1023.3 Requires at least 35 square feet of open area on at least one side of exterior stairs. Open area must be at least 42 inches from adjacent floor or landing.

7.2.2.6.6 Required to be at least 50% open on one side and prevent the accumulation of smoke.

Side Yards 1023.4 The open side must front on a yard, court, or public way.

No related section.

**Exit Discharge 1024**

Exit Discharge Location 1024.4 Must be located at least 10 feet from lot lines or adjacent buildings on the same lot (see Section 1023.3).

No related section.

Exit Discharge Components 1024.4 Must be arranged to limit build-up of smoke or other products of combustion.

No related section.

Width 1024.5 Width of egress courts must be at least 44 inches. Width must accommodate the occupant load.  
.1

7.7.1 Required to provide all occupants with safe access to a public way.

Construction and Openings 1024.5 Walls must be at least 1-hour fire-rated with 3/4-hour opening protection when less than 10 feet wide and  
.2

No related section.

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serving 10 or more occupants.

<b>Assembly</b>	<b>1025</b>	
Assembly Main Exit	1025.2	Group A facilities exceeding 300 occupants require a main exit capable of 50% of the load. Exception allows distribution of the exit capacity around the perimeter of the building if meeting specific requirements.
Foyers and Lobbies	1025.4	Spaces used to queue occupants until seats are available shall not diminish the required clear width of egress. Permanent separation of such spaces from egress paths and access to main exits is required.
Interior Balcony and Gallery Means of Egress	1025.5	Two means of egress required when serving over 50 people (one on each side). One must lead directly to an exit.
Enclosure of Balcony Openings	1025.5 .1	Vertical exit enclosures required, in compliance with Section 1020.1. Exceptions are allowed for theaters, churches, and auditoriums.
Width of Means of Egress for Assembly	1025.6	Aisle clear widths must meet Sections 1025.6.1 - 1025.6.3, depending on smoke protection
Without Smoke Protection	1025.6 .1	Provides detailed criteria for calculating the required egress width when seating is without smoke protection.
Smoke-Protected Seating	1025.6 .2	References Table 1025.6.2 for determining egress width for smoke-protected seating. Requires that a Life Safety Evaluation complying with

12.2.4 13.2.4	Required for all assembly occupancies.
12.1.7.2 13.1.7.2	Similar; requires exits to be provided from these spaces based on three square feet per person (in addition to other exits from the assembly areas).
12.2.4.3 13.2.4.3 12.2.4.4 13.2.4.4 12.2.4.5 13.2.4.5	For mezzanines with occupant load of less than 50 people, one exit is allowed. For occupant loads between 50 and 100, two exits are required, but both can be to the floor below. For occupant loads of 100 or more, exits conforming to NFPA 7.4.1 are required.
12.3.1 13.3.1	Similar; also allows stairs from lighting and access catwalks to be open, and those allowed under NFPA 8.2.5.8.
	No related section.
12.2.3.3	Allows egress width to be in accordance with NFPA 7.3 or 12.2.3.1. The factors modifying the width of ramps differ.
12.4.2.3 13.4.2.3	Similar; requires an increase in width based on a formula when risers are greater than seven inches.

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NFPA 101 be performed if Table 1025.6.2 factors are used.

Roof Height	1025.6 .2.2	Requires minimum of 15 feet above highest smoke protected seating area. Exception provided for exterior canopies.
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No related section.	
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Automatic Sprinklers	1025.6 .2.3	Sprinklers are required in enclosed areas within facilities utilizing smoke-protected seating. Exceptions provided for entertainment or performance areas if the roof is at least 50 feet above the floor. Exceptions also made for press boxes and storage facilities less than 1,000 square feet in area.
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12.4.2.1 13.4.2.1	Similar; allows omission of sprinklers over performance and seating areas based on engineering analysis. No exemptions for press boxes and storage facilities.
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Width of Means of Egress for Outdoor Smoke-Protected Assembly	1025.6 .3	Provides egress factors for exit width from outdoor smoke-protected assembly seating. Requires 0.08 inches per person for aisles and stairs and .006 inches per person for ramps, corridors, and tunnels.
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No related section.	
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Travel Distance	1025.7	Requires maximum travel distance of 200 feet in non-sprinklered buildings, and 250 feet in sprinklered. Exceptions are provided for smoke-protected seating (measured to the concourse or vomitory) and open-air seating (400 feet to the exterior).
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12.2.6 13.2.6 12.4.2.8 13.4.2.8	Similar; maximum travel distance is 150 feet for unsprinklered and 200 feet for sprinklered. Smoke protected seating may have 400 feet to vomitory or egress concourse.
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Minimum Aisle Width	1025.9 .1	Requirements range from 23 to 48 inches, depending on the configuration.
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12.2.5.6.3 13.2.5.6.3	Similar; smaller widths are permitted in existing assembly occupancies.
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Uniform Width	1025.9 .4	When egress is in two directions in an aisle, the width must be uniform.
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12.2.5.4.5 13.2.5.4.5	Similar; provides exceptions for certain aisles.
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Assembly Aisle Termination	1025.9 .5	Aisles must end in a cross aisle or other component providing exit access. Exceptions made for limited dead ends and smoke-
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No related section.	
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protected seating meeting specific requirements.

Assembly Aisle Obstructions 1025.9 .6 Handrails are the only allowable obstruction to required width of aisles.

No related section.

Risers 1025.1 1.2 Riser height limited to between 4 and 8 inches. Exceptions provided for specific conditions. Allows up to 9-inch risers when required to accommodate adjacent seating.

12.2.5.6.6 Similar; includes exceptions for telescoping seating.  
13.2.5.6.6

Seat Stability 1025.1 2 Seats are required to be fixed to floor. Provides exceptions for various configurations.

No related section.

Handrails 1025.1 3 Required for aisle stairs and ramps with slopes exceeding 1:15. Ramps with slopes not exceeding 1:8 with seats on both sides are not required to have handrails. Exception allowed if guards meeting graspability requirements are provided at the side of the aisle.

12.2.5.6.8 Required for ramps having a gradient in excess of 1:12.  
13.2.5.6.8 Exceptions similar to IBC.

Assembly Guards 1025.1 4 Assembly guards shall comply with Sections 1025.14.1 through 1025.14.3

No related section.

Cross Aisles 1025.1 4.1 Guards meeting Section 1013 are required at cross aisles. If the cross aisles is less than 30 inches above the adjacent floor, the guard must be at least 26 inches above the floor. Exceptions exempt guard requirements if the backs of seats on the cross aisle are at least 24 inches above the floor

12.2.11.1.3 Similar; requirements for existing assembly varies.

**Minimum Size 1026.2 Openings must be at least 5.7 square feet. Five square feet required for ground floor openings.**

**24.2.2.3 Similar; does not reduce the required size for ground floor openings.**  
**32.2.2.3**  
**33.2.2.3**

**IBC TABLE 1005.1  
EGRESS WIDTH PER OCCUPANT SERVED**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM		WITH SPRINKLER SYSTEM	
	Stairways (inches per occupant)	Other egress components (inches per occupant)	Stairways (inches per occupant)	Other egress components (inches per occupant)
Occupancies other than those listed below	0.3	0.2	0.2	0.15
Hazardous: H-1, H-2, and H-4	0.7	0.4	0.3	0.2
Institutional: I-2	NA	NA	0.3	0.2

For SI: 1 inch – 25.4 mm. NA = Not applicable

- a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.1.1 or 903.3.1.2

**NFPA 101 TABLE 7.3.3.1  
Capacity Factors**

AREA	Stairways (width per person)		Level Components and Ramps (width per person)	
	In.	mm	In.	mm
Board and care	0.4	10	0.2	5
Health care, sprinklered	0.3	7.6	0.2	5
Health care, non sprinklered	0.6	15	0.5	13
High hazard contents	0.7	18	0.4	10
All others	0.3	7.6	0.2	5



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