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CHAPTER 10

MEANS OF EGRESS

SECTION BC 1001 ADMINISTRATION

1001.1 General. Buildings or portions thereof shall be provided with a means of egress system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of means of egress components required to provide an approved means of egress from structures and portions thereof.

1001.2 Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the minimum width or required capacity of the means of egress to less than required by this code.

1001.3 Maintenance. Means of egress shall be maintained in accordance with the *New York City Fire Code*.

1001.3.1 Workplace exits. Except as specifically provided for in this chapter, no employer or agent of such employer shall lock the doors of or otherwise prohibit exit from any workplace, when by so doing the health or safety of any employee, independent contractor or other individual working in such workplace may become endangered by fire or other hazardous condition. Refer to Article 307 of Title 28 of the *Administrative Code*.

1001.3.2 Inadequate exits for existing structures. Every existing structure which is not provided with means of egress as required by this chapter and, in which the means of egress are, in the opinion of the commissioner, inadequate for the safety of the occupants, shall be provided with means of egress or fire protection as directed by the commissioner.

1001.4 Fire protection and emergency preparedness plans. Fire protection plans shall be provided for occupancies and buildings where required by Article 109 of the *Administrative Code*. Such fire protection plans shall comply with the applicable provisions of Section 28-109.3 of the *Administrative Code*. Emergency preparedness plans shall be provided for occupancies and buildings where required by the *New York City Fire Code*. Such emergency preparedness plans shall comply with the applicable provisions of Chapter 4 of the *New York City Fire Code*.

SECTION BC 1002 DEFINITIONS

1002.1 Definitions. This section contains terms defined elsewhere in the code, and terms with definitions that are specific to this section.

1002.1.1 Terms defined elsewhere in this code. The following terms are defined in Chapter 2:

ACCESSIBLE MEANS OF EGRESS.

AISLE.

AISLE ACCESSWAY.

ALTERNATING TREAD DEVICE.

AREA OF RESCUE ASSISTANCE.

ASSEMBLY SPACE.

ASSISTED RESCUE PATH.

BLEACHERS.

MEANS OF EGRESS

BREAKOUT.

COMMON PATH OF EGRESS TRAVEL.

CORRIDOR.

CORRIDOR, INTERIOR.

CORRIDOR, PUBLIC.

CROSS AISLE.

DEAD END.

DOOR, BALANCED.

EGRESS COURT.

EMERGENCY ESCAPE AND RESCUE OPENING.

EXIT.

EXIT ACCESS.

EXIT ACCESS DOORWAY.

EXIT ACCESS RAMP.

EXIT ACCESS STAIRWAY.

EXIT DISCHARGE.

EXIT DISCHARGE, LEVEL OF.

EXIT, HORIZONTAL.

EXIT PASSAGEWAY.

EXTERIOR EXIT RAMP.

EXTERIOR EXIT STAIRWAY.

FIRE EXIT HARDWARE.

FIXED SEATING.

FLIGHT.

FLOOR AREA, GROSS.

FLOOR AREA, NET.

FOLDING AND TELESCOPIC SEATING.

GRANDSTAND.

GUARD.

HANDRAIL.

INTERIOR EXIT RAMP.

INTERIOR EXIT STAIRWAY.

LOW ENERGY POWER-OPERATED DOOR.

MEANS OF EGRESS.

MERCHANDISE PAD.

NOSING.

OCCUPANT LOAD.

OCCUPANT SENSOR.

OPEN-ENDED CORRIDOR.

PANIC HARDWARE.

PHOTOSENSOR.

POWER-ASSISTED DOOR.

POWER-OPERATED DOOR.

PUBLIC WAY.

RAMP.

REFUGE AREA.

SCISSOR STAIRWAY.

SELF-LUMINOUS.

SMOKE-PROTECTED ASSEMBLY SEATING.

STAIR.

STAIRWAY.

STAIRWAY, SPIRAL.

WINDER.

1002.1.2 Definitions specific to this chapter. The following terms shall, for the purposes of this chapter, have the meanings shown herein:

COLLECTING SAFE AREA. A safe area that receives occupants from the assembly space it serves, as well as from other safe areas.

OPEN EXTERIOR SPACE. A street or other public space; or a yard, court, or plaza open on one or more sides and unroofed or open on all sides, which provides egress to a street or public space.

SAFE AREA. An interior or exterior space that serves as a means of egress by providing a transitional area from, and that also serves as a normal means of entry to, an assembly space.

SEATING SECTION. An area of seating bounded on all sides by aisles, cross aisles, walls or partitions.

SECTION BC 1003 GENERAL MEANS OF EGRESS

1003.1 Applicability. The general requirements specified in Sections 1003 through 1015 shall apply to all three elements of the means of egress system, in addition to those specific requirements for the exit access, the exit and the exit discharge detailed elsewhere in this chapter.

1003.2 Ceiling height. The means of egress shall have a ceiling height of not less than 7 feet, 6 inches (2286 mm).

Exceptions:

1. Ceilings that are permitted to be less than 7 feet, 6 inches (2286 mm) in accordance with Section 1208.2.
2. Ceilings of dwelling units and sleeping units within residential occupancies in accordance with Section 1208.2.

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3. Allowable projections in accordance with Section 1003.3.
4. Stair headroom in accordance with Section 1011.3.
5. Door height in accordance with Section 1010.1.3.
6. Ramp headroom in accordance with Section 1012.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas of public and private parking garages in accordance with Section 406.4.1.
8. Areas above and below mezzanine floors in accordance with Section 505.2.

1003.3 Protruding objects. Protruding objects on circulation paths shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 where a minimum headroom of 84 inches (2133.6 mm) is provided over any walking surface, including walks, corridors, aisles and passageways. Not more than 50 percent of the ceiling area of a means of egress shall be reduced in height by protruding objects.

Exception: Door closers and stops shall not reduce headroom to less than 78 inches (1981.2 mm).

A barrier shall be provided where the vertical clearance is less than 80 inches (2032 mm) high. The leading edge of such a barrier shall be located 27 inches (685 mm) maximum above the floor.

1003.3.2 Post-mounted objects. A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (101.6 mm) where the lowest point of the leading edge is more than 27 inches (685 mm) and less than 80 inches (2032 mm) above the walking surface. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (304.8 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2032 mm) minimum above the finished floor or ground.

Exception: These requirements shall not apply to sloping portions of handrails between the top and bottom riser of stairs and above the ramp run.

††† **1003.3.3 Horizontal projections.** Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2032 mm) above the floor shall not project horizontally more than 4 inches (101.6 mm) into the circulation path.

Exception: Handrails are permitted to protrude 4½ inches (114.3 mm) from the wall.

1003.3.4 Clear width. Protruding objects shall not reduce the minimum clear width of accessible routes.

1003.4 Floor surface. Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (304.8 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1012 shall be used. Where the difference in elevation is 6 inches (152.4 mm) or less, the ramp shall be equipped with handrails or floor finish materials that contrast with adjacent floor finish materials.

Exceptions: At locations that are not required to be accessible by Chapter 11:

1. A single step with a maximum riser height of 7 inches (177.8 mm) is permitted for buildings with occupancies in Groups F, H, R-2, R-3, S and U at exterior doors.
2. A step with a single riser or a stair with two risers and a tread is permitted where the risers and treads comply with Section 1011.5, the minimum depth of the tread is 13 inches (330 mm) and not less than one handrail complying with Section 1014 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the step or stair.

3. A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (304.8 mm) provided that the risers and treads comply with Section 1029.13 and the aisle is provided with a handrail complying with Section 1029.15.

Throughout a story in a Group I-2 occupancy, any change in elevation in portions of the means of egress that serve nonambulatory persons shall be by means of a ramp or sloped walkway.

1003.6 Means of egress continuity. The path of egress travel along a means of egress shall not be interrupted by a building element other than a means of egress component as specified in this chapter. Obstructions shall not be placed in the minimum width or required capacity of a means of egress component except projections permitted by this chapter. The minimum width or required capacity of a means of egress system shall not be diminished along the path of egress travel.

1003.7 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building.

Exceptions:

1. Elevators used as a component of an accessible means of egress in accordance with Section 1009.4.
2. Elevators permitted to be used for occupant self-evacuation pursuant to Sections 403.5.2 and 403.6.2.

SECTION BC 1004 OCCUPANT LOAD

1004.1 Design occupant load. In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be established by the largest number computed in accordance with Section 1004.1.3, unless otherwise permitted by Section 1004.1.3.1, 1004.1.3.2 or 1004.2.

1004.1.1 Cumulative occupant loads. Cumulative occupant loads shall be determined in accordance with Sections 1004.1.1.1 and 1004.1.1.2.

1004.1.1.1 Cumulative occupant loads for interconnected spaces. Where the path of egress travel includes intervening rooms, areas or spaces, cumulative occupant loads shall be determined in accordance with this section.

1004.1.1.1.1 Intervening spaces or accessory areas. Where occupants egress from one or more rooms, areas or spaces through others, the design occupant load shall be the combined occupant load of interconnected accessory or intervening spaces. Design of egress path capacity shall be based on the cumulative portion of occupant loads of all rooms, areas or spaces to that point along the path of egress travel.

1004.1.1.1.2 Adjacent levels for mezzanines. That portion of the occupant load of a mezzanine with required egress through a room, area or space on an adjacent level shall be added to the occupant load of that room, area or space.

1004.1.1.1.3 Adjacent stories. Other than for the egress components designed for convergence in accordance with Section 1005.6, the occupant load from separate stories shall not be added.

1004.1.1.2 Cumulative occupant loads in Group R-2 occupancies. Rooms, areas or spaces that are accessory to a Group R-2 occupancy and that comply with the conditions below may have occupant loads calculated individually per room, area, or space, and be classified as Occupancy Group R-2.

1004.1.1.2.1 Maximum occupant load per room. The occupant load in each individual room, area and space, including those subject to Section 1004.1.1.1.1 where applicable, shall not exceed 74 persons.

1004.1.1.2.2 Separated rooms. Each individual room, area and space shall be separated from others by minimum 1-hour fire-resistance-rated fire barriers constructed in accordance with Section 707. Opening protectives in accordance with Exception 3 of Section 707.6 shall not be permitted.

1004.1.1.2.3 Group R-2 accessory spaces as primary function on a story. Where the aggregate Group R-2 occupancy accessory area of all rooms, areas or spaces, including outdoor spaces that are not provided with independent means of egress and that do not converge into interior means of egress, exceed 50 percent of the

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building area of the story in which they are located, and the total number of occupants on such story exceeds 150 persons, the following conditions shall apply:

1. The interior corridors or portions thereof serving such accessory spaces shall be constructed as public corridors in accordance with Table 1020.1.2 with 1-hour fire-resistance-rated fire barriers, and 2-hour fire-resistance-rated fire barriers where a dead-end corridor exceeds 40 feet (12 192 mm) in length;
2. Access to the corridors shall be limited to those necessary for exit access through the corridor from normally occupied spaces. Direct openings from the mechanical, electrical and other storage spaces shall not be permitted, except that access to the corridor may be provided through a vestibule constructed with fire barriers, with a minimum fire-resistance rating consistent with the required hourly rating for the corridor;
3. Corridors or portions thereof serving such accessory spaces shall be sufficient to accommodate a total occupant load on the basis of 3 square feet (0.28 m²) per person;
4. The minimum dimension of such corridors shall be sufficient to accommodate the total occupant load discharging into such corridors, but shall in no case be less than 5 feet (1524 mm) in minimum dimension; and
5. In addition to Conditions 1 through 4 above, one of the following conditions shall be met:
 - 5.1. Each of the interior exit stairways and ramps serving such story shall be protected by a smokeproof enclosure in accordance with Section 909.20;
 - 5.2. The corridor or portions of the corridor serving the rooms, areas or spaces that are accessory to the Group R-2 occupancy shall be pressurized in accordance with requirements that are applicable to interior exit stairways. Connecting interior exit stairways need not be pressurized unless otherwise required by this code;
 - 5.3. All passenger elevators serving the rooms, areas, or spaces that are accessory to the Group R-2 occupancy shall comply with occupant self-evacuation elevator requirements in Section 3008.1 through 3008.11; or
 - 5.4. One additional exit stairway meeting the requirements of Sections 1009 and 1023 shall be provided in addition to the minimum number of exits required by Section 1006. The total width of any combination of remaining exit stairways with one exit stairway removed shall not be less than the total width required by Section 1005.3.

Rooms, areas or spaces that do not comply with the conditions in Sections 1004.1.1.2.1 and 1004.1.1.2.2, or Section 1004.1.1.2.3 where applicable, shall have occupant loads calculated cumulatively per story and be classified as Occupancy Group A.

1004.1.2 Multiple function occupant load. Where an area under consideration contains multiple functions having different occupant load factors, the design occupant load for such area shall be based on the floor area of each function calculated independently.

1004.1.3 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.3. For areas without fixed seating, the occupant load shall be not less than that number determined by dividing the floor area under consideration by the occupant load factor assigned to the function of the space as set forth in Table 1004.1.3.

**TABLE 1004.1.3
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross

Assembly Gaming floors (keno, slots, etc.) Exhibit gallery and museum	11 gross 30 net
Assembly with fixed seats	See Section 1004.3
Assembly without fixed seats Concentrated (chairs only—not fixed) Dance floor Dance floor (ballroom) Standing space Unconcentrated (tables and chairs)	7 net 5 net 10 net 5 net 15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas, including accessory areas on terraces and rooftops	100 gross ^{b, d}
Courtrooms – other than fixed seating areas	40 net
Day Care: Age under 6 months Age 6 months – 2 years Age 2 years – 6 years Age above 6 years	50 net 40 net 30 net 50 net

(continued)

TABLE 1004.1.3—continued
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Dormitories	50 gross
Educational Classroom area Shops and other vocational room areas Kindergarten, and pre-kindergarten	20 net 50 net 30 net
Exercise rooms	50 gross
Gymnasiums	15 net
Group H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas Inpatient treatment areas Outpatient areas Sleeping areas	240 gross 100 gross 120 gross
Kitchens, commercial	200 gross

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Library Reading rooms Stack area	50 net 100 gross
Locker rooms	50 gross
Mall buildings - covered and open	See Section 402.8.2
Mercantile Areas on other floors Basement and grade floor areas Storage, stock, shipping areas	60 gross 30 gross 300 gross
Parking garages	200 gross
Passenger terminal Baggage claim Baggage handling Concourse Passenger terminal or platform Waiting area (Standing) Waiting areas (Seated)	20 gross 300 gross 100 gross 1.5 X C* 15 gross 5 net
Residential Within dwelling units Rooftop and terrace accessory to Groups R-2 and R-3 Indoor residential amenity spaces accessory to Group R-2 (concentrated) ^e Indoor residential amenity spaces accessory to Group R-2 (unconcentrated) ^e	200 gross 200 gross ^{b, c, d} 15 net 50 net
Skating rinks, swimming pools Rink and pool Decks	50 gross 15 gross
Stages and platforms	15 net for performing area and 50 net remaining area
Warehouses	500 gross

C*-capacity of all passenger vehicles that can be unloaded simultaneously.

For SI: 1 square foot = 0.0929 m², 1 foot = 304.8 mm.

- Floor area in square feet per occupant.
- For the purposes of occupant load calculation, permanent fixtures and amenities such as shrubs, decorative pools, non-walkable paving surfaces, etc. may be deducted from the total floor area.
- A rooftop or terrace in Group R-2 or R-3 occupancies that is provided for the incidental, recreational use by the residential tenants residing in the same residential building.
- Where the maximum occupant load of the rooftop or terrace exceeds 74 persons based on occupant load calculations, a Place of Assembly Certificate of Operation is required pursuant to Section 28-117.1 of the *Administrative Code* and Item 1 of Section 303.7 of this code.
- To be used only when the occupant load for the function of the space is not listed elsewhere in Table 1004.1.3.

1004.1.3.1 Modifications. Where the actual number of occupants of any space will be significantly lower than listed in Table 1004.1.3, the commissioner may establish a lower basis for the determination of the number of occupants.

1004.1.3.2 Unlisted functions. Where data regarding the square feet area per person for a function is not listed in Table 1004.1.3, the occupant load shall be established by a registered design professional, subject to the approval of the commissioner.

1004.2 Increased occupant load. The occupant load permitted in any building, or portion thereof, is permitted to be increased from that number established for the functions in Table 1004.1.3, provided that all other requirements of the code are also met based on such modified number and the occupant load shall not exceed one occupant per 5 square feet (0.46 m²) of occupiable floor space, except for safe areas as specified in Section 1029.19.3 and standee areas as specified in Section 1029.18. Where required by the commissioner, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the commissioner, such diagram shall be posted. Capacity signs indicating the increased, stated occupant load in accordance with Sections 1029.1.3 and 1029.1.4 shall be posted where required by the commissioner.

1004.3 Fixed seating. For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces, shall be determined in accordance with Section 1004.1.3 and added to the number of fixed seats.

The occupant load of wheelchair spaces and the associated companion seat shall be based on one occupant for each wheelchair space and one occupant for the associated companion seat provided in accordance with Section 1108.2.3.

For areas having fixed seating without dividing arms, the occupant load shall be not less than the number of seats based on one person for each 18 inches (457.2 mm) of seating length.

The occupant load of seating booths shall be based on one person for each 24 inches (609.6 mm) of booth seat length measured at the backrest of the seating booth.

1004.4 Outdoor areas. Yards, patios, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be determined by the design professional subject to the approval of the commissioner. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

Exceptions:

1. Outdoor areas used exclusively for service of the building need only have one means of egress.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

1004.5 Multiple occupancies. Where a building contains two or more occupancies, the means of egress requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same means of egress system, those egress components shall meet the more stringent requirements of all occupancies that are served.

SECTION BC 1005 MEANS OF EGRESS SIZING

1005.1 General. All portions of the means of egress system shall be sized in accordance with this section.

Exception: Aisles and aisle accessways in rooms or spaces used for assembly purposes complying with Section 1029.

1005.2 Minimum width based on component. The minimum width, in inches (mm), of any means of egress components shall be not less than that specified for such component, elsewhere in this code.

1005.3 Required capacity based on occupant load. The required capacity, in inches (mm), of the means of egress for any room, area, space or story shall be not less than that determined in accordance with Sections 1005.3.1 and 1005.3.2.

1005.3.1 Stairways. The capacity, in inches, of means of egress stairways shall be calculated by multiplying the occupant load served by such stairways by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant.

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Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story.

Exceptions:

1. Facilities with smoke-protected assembly seating shall be permitted to use the capacity factors in Table 1029.6.2 indicated for stepped aisles for exit access or exit stairways where the entire path for means of egress from the seating to the exit discharge is provided with a smoke control system complying with Section 909.
2. Facilities with outdoor smoke-protected assembly seating shall be permitted to the capacity factors in Section 1029.6.3 indicated for stepped aisles for exit access or exit stairways where the entire path for means of egress from the seating to the exit discharge is open to the outdoors.

1005.3.2 Other egress components. The capacity, in inches, of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.

Exceptions:

1. Facilities with smoke-protected assembly seating shall be permitted to use the capacity factors in Table 1029.6.2 indicated for level or ramped aisles for means of egress components other than stairways where the entire path for means of egress from the seating to the exit discharge is provided with a smoke control system complying with Section 909.
2. Facilities with outdoor smoke-protected assembly seating shall be permitted to the capacity factors in Section 1029.6.3 indicated for level or ramped aisles for means of egress components other than stairways where the entire path for means of egress from the seating to the exit discharge is open to the outdoors.

1005.4 Continuity. The minimum width or required capacity of the means of egress required from any story of a building shall not be reduced along the path of egress travel until arrival at the public way.

1005.5 Distribution of minimum width and required capacity. Where more than one exit, or access to more than one exit, is required, the means of egress shall be configured such that the loss of any one exit, or access to one exit, shall not reduce the available capacity or width to less than 50 percent of the required capacity or width.

1005.6 Egress convergence. Where the means of egress from stories above and below converge at an intermediate level, the capacity of the means of egress from the point of convergence shall be not less than the largest minimum width or the sum of the required capacities for the stairways or ramps serving the two adjacent stories, whichever is larger.

1005.7 Encroachment. Encroachments into the required means of egress width shall be in accordance with the provisions of this section.

1005.7.1 Doors. Doors, when fully opened, shall not reduce the required width by more than 7 inches (177.8 mm). Doors in any position shall not reduce the required width by more than one-half.

Exceptions:

1. Surface-mounted latch release hardware shall be exempt from inclusion in the 7-inch (177.8 mm) maximum encroachment where both of the following conditions exist:
 - 1.1. The hardware is mounted to the side of the door facing away from the adjacent wall where the door is in the open position.
 - 1.2. The hardware is mounted not less than 34 inches (865 mm) nor more than 48 inches (1220 mm) above the finished floor.
2. The restrictions on door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 occupancies and within individual dwelling units of Group R-3 occupancies.

1005.7.2 Other projections. Handrail projections shall be in accordance with the provisions of Section 1014.8. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width not more than 1½ inches (38.1 mm) on each side.

Exception: Projections are permitted in corridors within Group I-2 in accordance with Section 407.4.3.

1005.7.3 Protruding objects. Protruding objects shall comply with the applicable requirements of Section 1003.3.

SECTION BC 1006 NUMBER OF EXITS AND EXIT ACCESS DOORWAYS

1006.1 General. The number of exits or exit access doorways required within the means of egress system shall comply with the provisions of Section 1006.2 for spaces, including mezzanines, and Section 1006.3 for stories.

1006.2 Egress from spaces. Rooms, areas or spaces, including mezzanines, within a story or basement shall be provided with the number of exits or access to exits in accordance with this section.

1006.2.1 Egress based on occupant load and common path of egress travel distance. Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1.

Exception: Care suites in Group I-2 occupancies complying with Section 407.4.

**TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY**

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL ≤ 30	OL > 30	
A ^c , E ^f , M	74	76	75	75 ^a
B	74	100	75	100 ^a
F	49	75	75	100 ^a
H-1, H-2, H-3	3	NP	NP	25 ^b
H-4 ^b , H-5 ^b , I-1, I-3, I-4	10	NP	NP	75 ^a
I-2 ^d	See Section 407	NP	NP	75 ^a
R-1	20	NP	NP	75 ^a
R-2	20 ^g	NP	NP	125 ^a
S	29	100	75 ^c	100 ^a
U	74	100	75	75 ^a

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

- a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- b. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.
- c. For a room or space used for assembly purposes having fixed seating, see Section 1029.8.
- d. For the travel distance limitations in Group I-2, see Section 407.4.
- e. The length of common path of egress travel distance in a Group S-2 open parking garage shall be not more than 100 feet (30 480 mm).
- f. Day care maximum occupant load is 10.
- g. Rooms, areas, or spaces that are accessory to a Group R-2 occupancy may have a maximum occupant load of 49.

1006.2.1.1 Three or more exits or exit access doorways. Three exits or exit access doorways shall be provided from any space with an occupant load of 501 to 1,000. Four exits or exit access doorways shall be provided from any space with an occupant load greater than 1,000.

1006.2.2 Egress based on use. The numbers of exits or access to exits shall be provided in the uses described in Sections 1006.2.2.1 through 1006.2.2.5.

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1006.2.2.1 Boiler, incinerator and furnace rooms. Two exit access doorways are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46.5 m²) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1006.2.2.2 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (92.9 m²) with refrigeration units or systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 refrigerant, or more than 30 pounds (13.6 kg) of any other group refrigerant, as classified in Section 1103.1 of the *New York City Mechanical Code*, shall have not less than two exits or exit access doors. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in exit access travel distance is permitted in accordance with Section 1017.1.

Doors shall swing in the direction of egress travel and shall be equipped with panic hardware, regardless of the occupant load served. Doors shall be tight fitting and self-closing.

1006.2.2.3 Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (92.9 m²) containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two exits or exit access doorways.

Exit access travel distance shall be determined as specified in Section 1017.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an exit or exit access doorway where such rooms are not protected by an approved automatic sprinkler system. Egress is allowed through adjoining refrigerated rooms or spaces.

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *New York City Mechanical Code*.

1006.2.2.4 Day care means of egress. Day care facilities, rooms or spaces that are classified under Occupancy Group E providing care for more than 10 children shall have access to not less than two exits or exit access doorways.

1006.2.2.5 Vehicular ramps. Vehicular ramps shall not be considered as an exit access ramp unless provided with pedestrian facilities along the ramp in accordance with Section 1012.1.

1006.3 Egress from stories or occupied roofs. The means of egress system serving any story, or occupied roof designed for human occupancy or use, shall be provided with the number of exits or access to exits based on the aggregate occupant load served in accordance with this section. The path of egress travel to an exit shall not pass through more than one adjacent story.

Each story or occupied roof designed for human occupancy or use above the second story of a building shall have not less than one interior or exterior exit stairway, or interior or exterior exit ramp. Where three or more exits or access to exits are required, not less than 50 percent of the required exits shall be interior or exterior exit stairways or ramps.

Exceptions:

1. Interior exit stairways and interior exit ramps are not required in open parking garages where the means of egress serves only the open parking garage.
2. Interior exit stairways and interior exit ramps are not required in outdoor facilities where all portions of the means of egress are essentially open to the outside.

1006.3.1 Egress based on occupant load. Each story or occupied roof designed for human occupancy or use shall have the minimum number of exits, or access to exits, as specified in Table 1006.3.1. A single exit or access to a single exit shall be permitted in accordance with Section 1006.3.2. The required number of exits, or exit access stairways or ramps providing access to exits, from any such story or occupied roof shall be maintained until arrival at the exit discharge or a public way.

**TABLE 1006.3.1
MINIMUM NUMBER OF EXITS OR
ACCESS TO EXITS PER STORY**

OCCUPANT LOAD (persons per story)	MINIMUM NUMBER OF EXITS (per story)
1–500	2
501–1,000	3
More than 1,000	4

1006.3.2 Single exits. A single exit or access to a single exit shall be permitted from any story or occupied roof designed for human occupancy or use where one of the following conditions exists:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 1006.3.2.
2. Rooms, areas and spaces complying with Section 1006.2.1 with exits that discharge directly to the exterior at the level of exit discharge are permitted to have one exit or access to a single exit.
3. Open or enclosed parking garages where vehicles are mechanically parked shall be permitted to have one exit provided such exit shall not be a vehicle ramp.
4. Group R-3 occupancies shall be permitted to have one exit or access to a single exit.
5. Individual single-story or multistory dwelling units shall be permitted to have a single exit or access to a single exit from the dwelling unit provided that both of the following criteria are met:
 - 5.1. The dwelling unit complies with Section 1006.2.1 as a space with one means of egress.
 - 5.2. Either the exit from the dwelling unit discharges directly to the exterior at the level of exit discharge, or the exit access outside the dwelling unit's entrance door provides access to not less than two approved independent exits.
6. Buildings of Occupancy Group R-2 where all of the following conditions are met:
 - 6.1. The building does not exceed four stories;
 - 6.2. The building contains not more than three dwelling units per story;
 - 6.3. The building is of construction Type I or II;
 - 6.4. The building does not exceed 2,500 square feet (232.3 m²) per story;
 - 6.5. Each dwelling unit has at least one window facing the street, or facing a lawful yard with open, unobstructed, and direct access to the street. Such yard or direct access shall be a minimum width equal to 25 percent of the vertical distance from the windowsill of the highest operable window, facing such yard or direct access, to the grade of such yard or direct access directly below such window, but shall in no case be less than 36 inches (914.4 mm) wide;
 - 6.6. The stairway extends to the roof surface through a stairway bulkhead complying with Section 1509.2, provided the roof has a slope not steeper than 20 degrees (0.35 rad), or the stairway is constructed against the street wall, with one window facing the street at each landing and access to the roof is provided via a scuttle with a stationary, noncombustible access ladder;
 - 6.7. The stairway is enclosed in 2-hour fire-rated walls with all exit doors leading into the stairway having at least 1½-hour fire rating; and
 - 6.8. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2.
7. Buildings of Occupancy Group R-2 of construction Type I or II not exceeding six stories and not exceeding 2,000 square feet (185.8 m²) per story.

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TABLE 1006.3.2
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT

STORY	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER FLOOR	MAXIMUM TRAVEL DISTANCE (feet)
First story above grade plane or cellar ^f	A, B ^b , E ^c , F ^b , M, U, S ^b	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R ^e	10	75
	S ^a	29	100
Second story above grade plane	B, F, M, S ^a	29	75
	R-2 ^{d, e}	NA	50
Third story above grade plane	R-2 ^{d, e}	NA	50

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

NA = Not Applicable.

- a. For the required number of exits for open or enclosed parking garages, see Section 1006.3.2, Item 3.
- b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
- c. Day care occupancies shall have a maximum occupant load of 10.
- d. Maximum four dwelling units per floor.
- e. Buildings classified as Occupancy 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 1030.
- f. Limited to the cellar closest to grade plane.

1006.3.2.1 Mixed occupancies. Where one exit, or exit access stairway or ramp providing access to exits at other stories, is permitted to serve individual stories, mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1006.3.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. In each story of a mixed occupancy building, the maximum number of occupants served by a single exit shall be such that the sum of the ratios of the calculated number of occupants of the space divided by the allowable number of occupants indicated in Table 1006.3.2 for each occupancy does not exceed one. Where dwelling units are located on a story with other occupancies, the actual number of dwelling units divided by four plus the ratio from the other occupancy does not exceed one.

1006.4 Open or enclosed parking garages. Open or enclosed parking garages shall not have less than two exits from each parking tier. An unenclosed vehicle ramp constructed in accordance with Section 1012.1 may serve as one of the required exits when provided with pedestrian facilities along the ramp. Such ramps serving as part of a nonaccessible means of egress in open or enclosed parking garages three stories or less in height and serving not more than one level below grade is permitted to comply with Section 1012.2, Exception 2.

Exception: One exit shall be permitted in parking garages complying with Item 3 of Section 1006.3.2.

SECTION BC 1007

EXIT AND EXIT ACCESS DOORWAY CONFIGURATION

1007.1 General. Exits, exit access doorways, and exit access stairways and ramps serving spaces, including individual building stories, shall be separated in accordance with the provisions of this section.

1007.1.1 Two exits or exit access doorways. Where two exits, exit access doorways, exit access stairways or ramps, or any combination thereof, are required from any portion of the exit access, they shall be placed a distance

apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between them. Stairs sharing any common wall, floor, ceiling, scissor stair assembly, or other enclosure shall be counted as one exit stairway.

Exceptions:

1. **Corridor measurements.** Where interior exit stairways or ramps are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1020, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. **Remote location in sprinklered buildings.** Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance shall be not less than one-third of the length of the maximum overall diagonal dimension of the area served.
3. **Group R-2 occupancies.** In Group R-2 occupancies, where stairs are enclosed in walls having at least a 2-hour fire resistance rating and constructed of masonry or masonry equivalent in accordance with department rules:
 - 3.1. The exit doors to such stairs shall be placed a distance apart equal to no less than 15 feet (4572 mm); and
 - 3.2. Such stairs shall be permitted to share common walls, floors, ceilings or scissor stairs assemblies or other enclosures provided that the construction separating the stairs is also of at least a 2-hour fire-resistance rating and constructed of masonry or masonry equivalent in accordance with department rules.
4. **Group B occupancies.** In Group B occupancies of construction Type I or II not exceeding 60 feet (18 288 mm) in height, not exceeding 2,000 square feet (185.8 m²) on any story and not exceeding a travel distance of 50 feet (15 240 mm) on any story, where stairs are enclosed in walls having at least a 2-hour fire-resistance rating and constructed of masonry or masonry equivalent in accordance with department rules:
 - 4.1. The exit doors to such stairs shall be placed a distance apart equal to no less than 15 feet (4572 mm); and
 - 4.2. Such stairs shall be permitted to share common walls, floors, ceilings or scissor stairs assemblies.

1007.1.1.1 Measurement point. The separation distance required in Section 1007.1.1 shall be measured in accordance with the following:

1. The separation distance to exit or exit access doorways shall be measured to the center point of the required doorway.
2. The separation distance to exit access stairways shall be measured to the center point of the closest riser.
3. The separation distance to exit access ramps shall be measured to the center point of the start of the ramp run.

1007.1.2 Three or more exits or exit access doorways. Where access to three or more exits is required, not less than two exit or exit access doorways shall be arranged in accordance with the provisions of Section 1007.1.1. Additional required exit or exit access doorways shall be arranged a reasonable distance apart so that if one becomes blocked, the others will be available.

1007.1.3 Remoteness of exit access stairways or ramps. Where two exit access stairways or ramps provide the required means of egress to exits at another story, the required separation distance shall be maintained for all portions of such exit access stairways or ramps.

1007.1.3.1 Three or more exit access stairways or ramps. Where more than two exit access stairways or ramps provide the required means of egress, not less than two shall be arranged in accordance with Section 1007.1.3.

SECTION BC 1008 MEANS OF EGRESS ILLUMINATION

1008.1 Means of egress illumination. Illumination shall be provided in the means of egress in accordance with Section 1008.2. Under emergency power, means of egress illumination shall comply with Section 1008.3.

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1008.2 Illumination required. Exits, exit discharges and public corridors shall be illuminated at all times by either daylight or electric lighting fixtures. Exit access components shall be illuminated by either daylight or electric lighting fixtures at all times that the space served by the exit access component is occupied.

Exceptions:

1. Occupancies in Group U.
2. Aisle accessways in Group A.
3. Dwelling units and sleeping units in Groups I-1, R-1, R-2 and R-3.
4. Sleeping units of Group I occupancies.
5. Areas beyond safe dispersal area where such areas are provided, and designed in accordance with Section 1028.5, Exceptions 1 through 5.

1008.2.1 Illumination level under normal power. The means of egress illumination level shall be not less than 1 footcandle (11 lux) at the walking surface.

Exceptions:

1. For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the externally illuminated walking surface is permitted to be reduced during performances to not less than 0.5 footcandle (5.38 lux) for aisles and cross aisles, and 0.2 footcandle (2.15 lux) for other portions of the space, provided that the required illumination is automatically restored upon activation of a premise's fire alarm system where such system is provided.
2. Safe areas in assembly occupancies shall be illuminated in accordance with Section 1029.19.3.2.
3. Open exterior spaces used to receive occupants as Class 1 or 2 exits in assembly occupancies shall be illuminated in accordance with Section 1029.19.4.
4. In exits in buildings that contain existing photoluminescent exit path markings tested in laboratory conditions with 2 footcandles (22 lux) of activating illumination, the illumination level shall not be less than 2 footcandles (22 lux).

1008.2.2 Exit discharge. In Group I-2 occupancies where two or more exits are required, on the exterior landings required by Section 1010.1.6, means of egress illumination levels for the exit discharge shall be provided such that failure of any single lighting unit shall not reduce the illumination level on that landing to less than 1 footcandle (11 lux).

1008.2.3 Sensors and controls. Automatic, occupant sensor or photosensor lighting controls shall be permitted within means of egress, provided that the illumination level is not reduced to a level below the minimum requirements of Section 1008.2.1, and the switch controllers are equipped for fail-safe operation ensuring that if the sensor or control fails, the lighting levels will be at the levels required by Section 1008.2.1.

1008.3 Emergency power for illumination. The power supply for means of egress illumination shall normally be provided by the premise's electrical supply.

1008.3.1 Rooms and spaces that require two or more means of egress. In the event of power supply failure in rooms and spaces that require two or more means of egress, an emergency electrical system shall automatically illuminate all of the following areas:

1. Aisles.
2. Corridors.
3. Exit access stairways and ramps.
4. Safe areas in assembly occupancies where required by Section 1029.19.3.2.

1008.3.2 Buildings that require two or more means of egress. In the event of power supply failure in buildings that require two or more means of egress, an emergency electrical system shall automatically illuminate all of the following areas:

1. Interior exit access stairways and ramps.
2. Interior and exterior exit stairways and ramps.
3. Exit passageways.
4. Vestibules and areas on the level of discharge used for exit discharge in accordance with Section 1028.1.
5. Exterior landings as required by Section 1010.1.6 for exit doorways that lead directly to the exit discharge.

1008.3.3 Specific rooms and spaces. In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

1. Electrical equipment rooms containing electrical point of entry or building service disconnect.
2. Fire command centers.
3. Fire pump rooms.
4. Generator rooms.
5. Public restrooms with an area greater than 300 square feet (27.8 m²).

1008.3.4 Duration. The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 2702.

1008.3.5 Illumination level under emergency power. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 footcandle (11 lux) and a minimum at any point of 0.1 footcandle (1 lux) measured along the path of egress at floor level. Illumination levels shall be permitted to decline to 0.6 footcandle (6 lux) average and a minimum at any point of 0.06 footcandle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. In buildings that contain existing photoluminescent exit path markings tested in laboratory conditions with greater than 1 footcandle (11 lux) of activating, the initial illumination shall not be less than that required for activating the approved photoluminescent illumination. In Group I-2 occupancies, failure of any single lighting unit shall not reduce the illumination level to less than 0.2 footcandle (2.2 lux).

SECTION BC 1009 ACCESSIBLE MEANS OF EGRESS

1009.1 Accessible means of egress required. Accessible means of egress shall comply with this section. Accessible spaces shall be provided with not less than one accessible means of egress. Where more than one means of egress are required by Section 1006.2 or 1006.3 from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress.

Exceptions:

1. Accessible means of egress are not required in alterations to prior code buildings where the level of alterations does not trigger full compliance of accessibility pursuant to Section 28-101.4 of the *Administrative Code*.
2. One accessible means of egress is required from an accessible mezzanine level in accordance with Section 1009.3, 1009.4 or 1009.5.
3. In assembly areas with ramped aisles or stepped aisles, one accessible means of egress is permitted where the common path of egress travel is accessible and meets the requirements in Section 1029.8.

1009.2 Continuity and components. Each required accessible means of egress shall be continuous to a public way and shall consist of one or more of the following components:

1. Interior accessible routes complying with Section 1104.
2. Area of rescue assistance complying with Section 1009.6.

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3. Interior exit stairways complying with Sections 1009.3 and 1023.
4. Exit access stairways complying with Sections 1009.3 and 1019.3 or 1019.4.
5. Exterior exit stairways complying with Sections 1009.3 and 1027 and serving levels other than the level of exit discharge.
6. Elevators complying with Section 1009.4.
7. Platform lifts complying with Section 1009.5.
8. Horizontal exits complying with Section 1026.
9. Ramps complying with Section 1012.
10. Exit discharges complying with Section 1028.
11. Exterior accessible routes complying with Section 1104.
12. Exterior areas for assisted rescue complying with Section 1009.7 serving exits at the level of exit discharge.
13. Unenclosed vertical exits serving safe areas in assembly occupancies permitted by Section 1029.19.3.1.

1009.2.1 High-rise buildings. In high-rise buildings subject to Section 403, at least one required accessible means of egress shall be an elevator complying with Section 1009.4.

Exceptions:

1. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the level of exit discharge.
2. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1012.
3. In buildings of Occupancy Group R-2 not subject to the requirements of emergency power in Section 403.

1009.2.2 Exit discharge. Where an exit discharge is not accessible, an exterior area for assisted rescue shall be provided in accordance with Section 1009.7. An exterior area for assisted rescue shall not be required where an exit discharge is on an assisted rescue path from a stairway or an elevator.

1009.2.3 Exterior exit stairway. Where an exit stairway is open to the exterior, the accessible means of egress shall include either an area of rescue assistance in accordance with Section 1009.6 or an exterior area for assisted rescue in accordance with Section 1009.7.

1009.3 Stairways. To be considered part of an accessible means of egress, a stairway between stories shall have a clear width of 48 inches (1220 mm) minimum between handrails and shall either incorporate an area of rescue assistance within an enlarged floor-level landing or shall be accessed from an area of rescue assistance complying with Section 1009.6. Exit access stairways that connect levels in the same story are not permitted as part of an accessible means of egress.

Exceptions: The following exceptions apply to the requirements of clear width and area of rescue assistance, and do not supersede the other requirements of the accessible means of egress:

1. Exit access stairways providing means of egress from mezzanines are permitted as part of an accessible means of egress.
2. The clear width of 48 inches (1220 mm) between handrails and the area of rescue assistance is not required at exit access stairways as permitted by Section 1017 or exit stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. The clear width of 48 inches (1220 mm) between handrails is not required for interior exit stairways accessed from a refuge area in conjunction with a horizontal exit.
4. Areas of rescue assistance are not required at exit access stairways where two-way communication is provided at the elevator landing in accordance with Section 1009.8.

5. Areas of rescue assistance are not required at stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
6. Areas of rescue assistance are not required at stairways serving open parking garages.
7. Areas of rescue assistance are not required for smoke-protected assembly seating areas complying with Section 1029.6.2.
8. Areas of rescue assistance are not required in Group R-2 occupancies.
9. Areas of rescue assistance are not required for stairways accessed from a refuge area in conjunction with a horizontal exit.

1009.4 Elevators. To be considered part of an accessible means of egress, an elevator shall comply with the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1 as modified by Appendix K, and Section 1109.7 of this code. Standby power shall be provided in accordance with Chapter 27 and Section 3003. The elevator shall be accessed from an area of rescue assistance complying with Section 1009.6.

Exceptions:

1. Areas of rescue assistance are not required at the elevator in open parking garages.
2. Areas of rescue assistance are not required in buildings and facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of rescue assistance are not required at elevators not required to be located in a shaft in accordance with Section 712.
4. Areas of rescue assistance are not required at elevators serving smoke-protected assembly seating areas complying with Section 1029.6.2.
5. Areas of rescue assistance are not required for elevators accessed from a refuge area in conjunction with a horizontal exit.

1009.5 Platform lifts. Platform (wheelchair) lifts shall be permitted to serve as part of an accessible means of egress where allowed as part of a required accessible route in Section 1109.8, except for Item 10. Platform lifts shall be installed in accordance with ASME A18.1. Standby power for the platform lift shall be provided in accordance with Chapter 27 for platform lifts permitted to serve as part of an accessible means of egress.

1009.5.1 Openness. Platform lifts on an accessible means of egress shall not be installed in a fully enclosed hoistway.

1009.6 Areas of rescue assistance. Every required area of rescue assistance shall be accessible from the space it serves by one or more accessible means of egress components as listed in Section 1009.2.

1009.6.1 Travel distance. The maximum travel distance from any accessible space to an area of rescue assistance shall not exceed the exit access travel distance permitted for the occupancy in accordance with Section 1017.1.

1009.6.2 Stairway or elevator access. Every required area of rescue assistance shall have direct access to a stairway complying with Sections 1009.3 and 1023, or an elevator complying with Section 1009.4.

1009.6.2.1 Elevator lobby. Where an elevator lobby serves as an area of rescue assistance, the shaft and lobby shall comply with Section 713.14 and Chapter 30.

1009.6.3 Size. Each area of rescue assistance shall be sized to accommodate one wheelchair space of 30 inches by 48 inches (762 mm by 1220 mm) for each 200 occupants or portion thereof, based on the occupant load of the area of rescue assistance and areas served by the area of rescue assistance. Such wheelchair spaces shall not reduce the means of egress minimum width or required capacity. Access to any of the required wheelchair spaces in an area of rescue assistance shall not be obstructed by more than one adjoining wheelchair space.

1009.6.4 Separation. Each area of rescue assistance shall be separated from the remainder of the story by a smoke barrier complying with Section 709 or a horizontal exit complying with Section 1026. Each area of rescue assistance shall be designed to minimize the intrusion of smoke.

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Exceptions:

1. Areas of rescue assistance located within an enclosure for interior exit stairways complying with Section 1023.
2. Areas of rescue assistance in outdoor facilities where exit access is essentially open to the outside.

1009.6.5 Two-way communication. Areas of rescue assistance shall be provided with a two-way communication system complying with Sections 1009.8.1 and 1009.8.2.

1009.7 Exterior areas for assisted rescue. Exterior areas for assisted rescue shall be accessed by an accessible route from the area served.

Where the exit discharge does not include an accessible route from an exit located on the level of exit discharge to a public way, an exterior area of assisted rescue shall be provided on the exterior landing in accordance with Sections 1009.7.1 through 1009.7.4.

1009.7.1 Size. Each exterior area for assisted rescue shall be sized to accommodate wheelchair spaces in accordance with Section 1009.6.3.

1009.7.2 Separation. Exterior walls separating the exterior area of assisted rescue from the interior of the building shall have a minimum fire-resistance rating of 1 hour, rated for exposure to fire from the inside. The fire-resistance-rated exterior wall construction shall extend horizontally 10 feet (3048 mm) beyond the landing on either side of the landing or equivalent fire-resistance-rated construction is permitted to extend out perpendicular to the exterior wall 4 feet (1220 mm) minimum on the side of the landing. The fire-resistance-rated construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower. Openings within such fire-resistance-rated exterior walls shall be protected in accordance with Section 716.

1009.7.3 Openness. The exterior area for assisted rescue shall be open to the outside air. The sides other than the separation walls shall be not less than 50 percent open, and the open area shall be distributed so as to minimize the accumulation of smoke or toxic gases.

1009.7.4 Stairways. Stairways that are part of the accessible means of egress for the exterior area for assisted rescue shall provide a clear width of 48 inches (1220 mm) between handrails.

Exception: The clear width of 48 inches (1220 mm) between handrails is not required at stairways serving buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

1009.8 Two-way communication. A two-way communication system complying with Sections 1009.8.1 and 1009.8.2 shall be provided at the landing serving each elevator or bank of elevators on each accessible floor that is one or more stories above or below the level of exit discharge.

Exceptions:

1. Two-way communication systems are not required at the landing serving each elevator or bank of elevators where the two-way communication system is provided within areas of rescue assistance in accordance with Section 1009.6.5.
2. Two-way communication systems are not required on floors provided with ramps conforming to the provisions of Section 1012.
3. Two-way communication systems are not required at the landings serving only service elevators that are not designated as part of the accessible means of egress or serve as part of the required accessible route into a facility.
4. Two-way communication systems are not required at the landings serving only freight elevators that are not designated as part of the accessible means of egress or serve as part of the required accessible route into a facility.
5. Two-way communication systems are not required at the landing serving a private residence elevator.

1009.8.1 System requirements. Two-way communication systems shall provide communication between each required location and the fire command center or a central control point location approved by the Fire Department. Where the central control point is not a constantly attended location, a two-way communication system shall have a timed automatic telephone dial-out capability to a monitoring location or 911. The two-way communication system shall include both audible and visible signals.

1009.8.2 Directions. Directions for the use of the two-way communication system, instructions for summoning assistance via the two-way communication system and written identification of the location shall be posted adjacent to the two-way communication system. Signage shall comply with the ICC A117.1 requirements for visual characters.

1009.9 Signage. Signage indicating special accessibility provisions shall be provided as shown:

1. Each door providing access to an area of rescue assistance from an adjacent floor area shall be identified by a sign stating: AREA OF RESCUE ASSISTANCE.
2. Each door providing access to an exterior area for assisted rescue shall be identified by a sign stating: EXTERIOR AREA FOR ASSISTED RESCUE.

Signage shall comply with the ICC A117.1 requirements for visual characters and include the International Symbol of Accessibility. Where exit sign illumination is required by Section 1013.3, the signs shall be illuminated. Additionally, visual character, raised character and braille signage complying with ICC A117.1 shall be located at each door to an area of rescue assistance and exterior area for assisted rescue in accordance with Section 1013.4 of this code.

1009.10 Directional signage. Directional signage indicating the location of all other means of egress and which of those are accessible means of egress shall be provided at the following:

1. At exits serving a required accessible space but not providing an approved accessible means of egress.
2. At elevator landings.
3. Within areas of rescue assistance.

1009.11 Instructions. In areas of rescue assistance and exterior areas for assisted rescue, instructions on the use of the area under emergency conditions shall be posted. Signage shall comply with the ICC A117.1 requirements for visual characters. The instructions shall include all of the following:

1. Persons able to use the exit stairway do so as soon as possible, unless they are assisting others.
2. Information on planned availability of assistance in the use of stairs or supervised operation of elevators and how to summon such assistance.
3. Directions for use of the two-way communication system where provided.

SECTION BC 1010 DOORS, GATES AND TURNSTILES

1010.1 Doors. Means of egress doors shall meet the requirements of this section. Doors serving a means of egress system shall meet the requirements of this section and Section 1022.2. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section.

Means of egress doors shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting materials shall not be used on means of egress doors. Means of egress doors shall not be concealed by curtains, drapes, decorations or similar materials.

1010.1.1 Size of doors. The minimum width and height of each door opening shall be in accordance with this section.

1010.1.1.1 Door width. The required capacity of each door opening shall be sufficient for the occupant load thereof and shall provide a minimum clear width of 32 inches (812.2 mm). Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear width of 32 inches (812.8 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches (812.8 mm). The

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maximum width of a swinging door leaf shall be 48 inches (1220 mm) nominal. Means of egress doors in a Group I-2 occupancy used for the movement of beds shall provide a clear width not less than 41 1/2 inches (1054.1 mm).

Exceptions:

- 1 The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in Group R-2 and R-3 occupancies.
2. Door openings to resident sleeping units in Group I-3 occupancies shall have a clear width of not less than 28 inches (711.2 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum width.
4. Width of door leaves in revolving doors that comply with Section 1010.1.4.1 shall not be limited.
5. In other than Group R-1 occupancies, the minimum widths shall not apply to interior egress doors within a dwelling unit or sleeping unit that is not required to be an Accessible unit, Type B+NYC or Type B unit.
6. Doors to walk-in freezers and coolers less than 1,000 square feet (92.9 m²) in area shall have a maximum width of 60 inches (1524 mm).
7. In Group R-1 dwelling units or sleeping units not required to be Accessible units, the minimum width shall not apply to doors for showers or saunas.

1010.1.1.2 Projections into clear width. There shall not be projections into the required clear width lower than 34 inches (863.4 mm) above the floor or ground. Projections into the clear opening width between 34 inches (863.4 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (101.6 mm).

Exception: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the floor.

1010.1.1.3 Height. The height of doors shall be not less than 80 inches (2032 mm).

Exceptions:

1. Door openings within a dwelling unit or sleeping unit shall be not less than 78 inches (1981.2 mm) in height.
2. Exterior door openings in dwelling units and sleeping units, other than the required exit door, shall be not less than 76 inches (1930.4 mm) in height.

1010.1.2 Door swing. Egress doors shall be installed in accordance with this section.

1010.1.2.1 Mounting. Egress doors shall be of the pivoted or side-hinged swinging type.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1010.1.4.1.
6. In other than Group H occupancies, special purpose horizontal sliding, accordion or folding door assemblies complying with Section 1010.1.4.3.
7. Power-operated doors in accordance with Section 1010.1.4.2.
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. In other than Group H occupancies, manually operated horizontal sliding doors are permitted in a means of egress from spaces with an occupant load of 10 or less.

1010.1.2.2 Direction of swing. Doors shall swing in the direction of egress travel where serving:

1. Group F or H occupancies.
2. Rooms or spaces with an occupant load of 75 or more persons.

3. Rooms or spaces requiring more than one exit door.
4. Automatic teller machines in accordance with Section 10-160 of the *Administrative Code*.

Exception: Doors need not swing in the direction of egress travel for exterior street floor exit doors from lobbies serving only Group R-2 or R-3 occupancies.

1010.1.3 Door opening force. The force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5-pounds (22.2 N). These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position. For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound (66.7 N) force. The door shall be set in motion when subjected to a 30-pound (133.4 N) force. The door shall swing to a full-open position when subjected to a 15-pound (66.7 N) force.

1010.1.3.1 Location of applied forces. Forces shall be applied to the latch side of the door.

1010.1.4 Special doors. Special doors and security grilles shall comply with the requirements of Sections 1010.1.4.1 through 1010.1.4.4.

1010.1.4.1 Revolving doors. Revolving doors shall comply with the following:

1. Revolving doors shall comply with BHMA A156.27 and shall be installed in accordance with the manufacturer's instructions.
2. Each revolving door shall be capable of breakout in accordance with BHMA A156.27 and shall provide an aggregate width of not less than 36 inches (914.4 mm).
3. A revolving door shall not be located within 10 feet (3048 mm) of the foot or top of stairways or escalators. A dispersal area shall be provided between the stairways or escalators and the revolving doors.
4. The revolutions per minute (rpm) for a revolving door shall not exceed the maximum rpm as specified in BHMA A156.27. Manual revolving doors shall comply with Table 1010.1.4.1(1). Automatic or power-operated revolving doors shall comply with Table 1010.1.4.1(2).
5. An emergency stop switch shall be provided near each entry point of power or automatic operated revolving doors within 48 inches (1220 mm) of the door and between 24 inches (609.6 mm) and 48 inches (1220 mm) above the floor. The activation area of the emergency stop switch button shall be not less than 1 inch (25.4 mm) in diameter and shall be red.
6. Each revolving door shall have a side-hinged swinging door that complies with Section 1010.1 in the same wall and within 10 feet (3048 mm) of the revolving door.
7. Revolving doors shall not be part of an accessible route required by Section 1009 and Chapter 11.

⚠⚠⚠ **TABLE 1010.1.4.1(1)**
MAXIMUM DOOR SPEED MANUAL REVOLVING DOORS

REVOLVING DOOR MAXIMUM NOMINAL DIAMETER (FT-IN)	MAXIMUM ALLOWABLE REVOLVING DOOR SPEED (RPM)
6-0	12
7-0	11
8-0	10
9-0	9
10-0	8

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

TABLE 1010.1.4.1(2)
**MAXIMUM DOOR SPEED AUTOMATIC OR
POWER-OPERATED REVOLVING DOORS**

REVOLVING DOOR MAXIMUM NOMINAL DIAMETER (FT-IN)	MAXIMUM ALLOWABLE REVOLVING DOOR SPEED (RPM)
8-0	7.2

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9-0	6.4
10-0	5.7
11-0	5.2
12-0	4.8
12-6	4.6
14-0	4.1
16-0	3.6
17-0	3.4
18-0	3.2
20-0	2.9
24-0	2.4

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

1010.1.4.1.1 Egress component. A revolving door used as a component of a means of egress shall comply with Section 1010.1.4.1 and the following three conditions:

1. Revolving doors shall not be given credit for more than 50 percent of the minimum width or required capacity.
2. Each revolving door shall be credited with a capacity based on not more than a 50-person occupant load.
3. Each revolving door shall provide for egress in accordance with BHMA A156.27 with a breakout force of not more than 130 pounds (578.3 N).

1010.1.4.1.2 Other than egress component. A revolving door used as other than a component of a means of egress shall comply with Section 1010.1.4.1. The breakout force of a revolving door not used as a component of a means of egress shall not be more than 180 pounds (800.7 N).

Exception: A breakout force in excess of 180 pounds (800.7 N) is permitted if the collapsing force is reduced to not more than 130 pounds (578.3 N) when not less than one of the following conditions is satisfied:

1. There is a power failure or power is removed to the device holding the door wings in position.
2. There is an actuation of the automatic sprinkler system where such system is provided.
3. There is an actuation of a smoke detection system that is installed in accordance with Section 907 to provide coverage in areas within the building that are within 75 feet (22 860 mm) of the revolving doors.
4. There is an actuation of a manual control switch, in an approved location and clearly identified, that reduces the breakout force to not more than 130 pounds (578.3 N).

1010.1.4.2 Power-operated doors. Where means of egress doors are operated or assisted by power, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit means of egress travel or closed where necessary to safeguard means of egress. The forces required to open these doors manually shall not exceed those specified in Section 1010.1.3, except that the force to set the door in motion shall not exceed 50 pounds (222.4 N). The door shall be capable of swinging open from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Power-operated swinging doors, power-operated sliding doors and power-operated folding doors shall comply with BHMA A156.10. Power-assisted swinging doors and low-energy power-operated swinging doors shall comply with BHMA A156.19.

Exceptions:

1. Occupancies in Group I-3.
2. Horizontal sliding doors complying with Section 1010.1.4.3.

3. For a biparting door in the emergency breakout mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (812.8 mm) single-leaf requirement of Section 1010.1.1, provided a minimum 32-inch (812.8 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

1010.1.4.3 Special purpose horizontal sliding, accordion or folding doors. In other than Group H occupancies, special purpose horizontal sliding, accordion or folding door assemblies permitted to be a component of a means of egress in accordance with Exception 6 to Section 1010.1.2.1 shall comply with all of the following criteria:

1. The doors shall be power operated and shall be capable of being operated manually in the event of power failure.
2. The doors shall be openable by a simple method from both sides without special knowledge or effort.
3. The force required to operate the door shall not exceed 30 pounds (133.4 N) to set the door in motion and 15 pounds (66.7 N) to close the door or open it to the minimum required width.
4. The door shall be openable with a force not to exceed 15 pounds (66.7 N) when a force of 250 pounds (1112 N) is applied perpendicular to the door adjacent to the operating device.
5. The door assembly shall comply with the applicable fire protection rating and, where rated, shall be self- or automatic closing by smoke detection in accordance with Section 716.5.9.3, shall be installed in accordance with NFPA 80 and shall comply with Section 716 of this code.
6. The door assembly shall have an integrated standby power supply.
7. The door assembly power supply shall be electrically supervised.
8. The door shall open to the minimum required width within 10 seconds after activation of the operating device.
9. The door shall not be provided with a latch or lock other than panic hardware or fire exit hardware complying with Section 1010.1.10.

***1010.1.4.4 Security grilles.** In Groups B, M and S, horizontal sliding or vertical security grilles are permitted at the main entrance where the opening of such grilles are essential to the operation of the establishments. Such grilles shall be installed in accordance with the following criteria:

1. Security grilles shall be openable from the inside without the use of a key or special knowledge or effort during periods that the space is occupied.
2. The security grilles shall remain secured in the full-open position during the period of occupancy by the general public.
3. Where two or more means of egress are required, not more than one-half of the exits or exit access doorways shall be equipped with horizontal sliding or vertical security grilles.

**Section 1010.1.4.4 was amended by [Local Law 123 of 2026](#). This law has an effective date of July 30, 2026.*

1010.1.5 Floor elevation. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 0.25 unit vertical in 12 units horizontal (2-percent slope).

Exceptions:

1. Doors serving individual dwelling units in Groups R-2 and R-3 where the following apply:
 - 1.1. A door is permitted to open at the top step of an interior flight of stairs within the dwelling unit, provided the door does not swing over the top step.
 - 1.2. Screen doors and storm doors are permitted to swing over stairs or landings.
2. Exterior doors as provided for in Section 1003.5, Exception 1, and Section 1022.2, which are not on an accessible route.
3. In Group R-3 occupancies not required to be Accessible units, Type B+NYC units or Type B units, the landing at an exterior doorway shall be not more than 7³/₄ inches (186.9 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing.
4. Variations in elevation due to differences in finish materials, but not more than 1/2 inch (12.7 mm).

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5. Exterior spaces of Type B+NYC units and Type B units where permitted pursuant to the exception to Section 1107.4.
6. Doors serving equipment spaces not required to be accessible in accordance with Section 1103.2.9 and serving an occupant load of five or less shall be permitted to have a landing on one side to be not more than 7 inches (177.8 mm) above or below the landing on the egress side of the door.

1010.1.6 Landings at doors. Landings shall have a width not less than the width of the stairway or the door, whichever is greater. Doors in the fully open position shall not reduce a required dimension by more than 7 inches (177.8 mm). At any stairway landing, or when a door landing serves an occupant load of 50 or more, doors in any position shall not reduce the landing to less than 75 percent of its required width. Landings shall have a length measured in the direction of travel of not less than 44 inches (1117.6 mm).

Exceptions:

1. Landing length in the direction of travel in Groups R-3 and U and within individual units of Group R-2 need not exceed 36 inches (914.4 mm).
2. In Group R-2 occupancies, where 36 inches wide stairways are permitted pursuant to Section 1011.2, Exception 1.2, such stairway landing length in the direction of travel shall be permitted to be not less than 36 inches (914.4 mm) or the width of the stairway, whichever is greater. Doors opening onto such stairway landings shall not reduce the landing width.

1010.1.7 Thresholds. Thresholds at doorways shall not exceed $\frac{3}{4}$ inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or $\frac{1}{2}$ inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than $\frac{1}{4}$ inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

Exceptions:

1. In occupancy Group R-2 or R-3, threshold heights for sliding and side-hinged exterior doors shall be permitted to be up to $7\frac{3}{4}$ inches (196.9 mm) in height if all of the following apply:
 - 1.1. The door is not part of the required means of egress.
 - 1.2. The door is not part of an accessible route as required by Chapter 11.
 - 1.3. The door is not part of an Accessible unit, Type B+NYC unit or Type B unit.
 - 1.4. The exterior door, other than a storm or screen door, does not swing over the landing or step.
2. In Type B+NYC units and Type B units, where permitted pursuant to the exception to Section 1107.4, the threshold height on the exterior side of the door shall not exceed $4\frac{3}{4}$ inches (120.7 mm) in height above the exterior deck, patio or balcony for sliding doors or $4\frac{1}{2}$ inches (114.3 mm) above the exterior deck, patio or balcony for other doors.

1010.1.8 Door arrangement. Space between two doors in a series shall be 48 inches (1220 mm) minimum plus the width of a door swinging into the space. Doors in series shall swing either in the same direction or away from the space between the doors.

Exceptions:

1. The minimum distance between horizontal sliding power-operated doors in a series shall be 48 inches (1220 mm).
2. Storm and screen doors serving individual dwelling units in Groups R-2 and R-3 need not be spaced 48 inches (1220 mm) from the other door.
3. Doors within individual dwelling units in Group R-3.
4. Doors within individual dwelling units in Group R-2 that are not required to comply with Section 1107.
5. Exterior doors in vestibules in Group R-2 occupancies shall not be required to swing either in the same direction or away from the space between doors provided that the 48-inch (1220 mm) minimum space between door swings is maintained.

1010.1.9 Door operations. Except as specifically permitted by this section, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1010.1.9.1 Hardware. Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.

1010.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (863.4 mm) minimum and 48 inches (1220 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts in compliance with Section 3109.4.2 or 3109.5.1.7, as applicable.

1010.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

1. Places of detention or restraint.
2. Places where extra safeguards are required such as banks, museums, and jewelry stores subject to the approval of the commissioner and provided the locks are equipped with electrical release devices for remote control in case of emergencies. However, museums shall be subject to further special review by the commissioner and Fire Commissioner.
3. Main entrances in Occupancy Groups B, M, and S as permitted by Section 1010.1.4.4.
4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.
5. Doors serving Group R-2 occupancies as required by Section 1010.4.
6. In educational occupancies classified in Occupancy Group B or E, and college or student dormitories in Group R-1, stairways leading from the top floor to a roof may be provided with locked wire mesh gates openable by key.
7. On roofs that are not intended to be accessed by occupants other than building maintenance personnel, the use of a hook and eye closing device or other similar non-self-locking devices on the stairway side of all doors openable without the use of a key or special knowledge to roofs shall be permitted.
8. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

1010.1.9.4 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.
3. Where a pair of doors serves an occupant load of less than 75 persons in a Group B, F or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.
4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf provided such inactive leaf is not needed to meet egress capacity requirements and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.
5. Where a pair of doors serves patient care rooms in Group I-2 occupancies, self-latching edge- or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress capacity requirements and the inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.

1010.1.9.5 Unlatching. The unlatching of any door or leaf shall not require more than one operation.

Exception: More than one operation is permitted for unlatching doors in the following locations:

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1010.1.9.4.

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3. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1010.1.9.3, Items 4 and 5.

1010.1.9.5.1 Closet and bathroom doors in certain Group R occupancies. In community residences or intermediate-care facilities classified as Group R-1, R-2 or R-3 occupancies pursuant to Section 308.3.2, Exception 1, 2 or 3, within such facilities, closet doors that latch in the closed position shall be openable from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.

1010.1.9.6 Controlled egress doors in Groups I-1 and I-2. Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group I-1 or I-2 occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door locks shall unlock on actuation of the automatic sprinkler system or automatic fire detection system.
2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.
3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the fire command center, a nursing station or other approved location. The switch shall directly break power to the lock.
4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an exit.
5. The procedures for unlocking the doors shall be described and approved as part of the emergency planning and preparedness required by the *New York City Fire Code*.
6. All clinical staff shall have the keys, codes or other means necessary to operate the locking systems.
7. Emergency lighting shall be provided at the door.
8. The door locking system units shall be listed in accordance with UL 294.

Exceptions:

1. Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a psychiatric treatment area.
2. Items 1 through 4 shall not apply to doors to areas where a listed egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 hospital.

1010.1.9.7 Delayed egress locking systems. Subject to special review and approval by the commissioner, approved, listed, delayed egress locking systems may be permitted on doors serving spaces where extra safeguards are required in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 8 below.

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the automatic sprinkler system or automatic fire detection system, allowing immediate, free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the fire command center and other approved locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort of 15 pounds (66.7 N) is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only. Except where approved by the department, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system. Except where approved by the department, in Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.
6. A sign shall be provided on the door and shall be located above and within 12 inches (304.8 mm) of the door exit hardware. Except where approved by the department, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.
 - 6.1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS. Except where not more than 30 seconds is permitted on a delayed egress door is approved by the department, such sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 30 SECONDS.
 - 6.2. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS. Except where not more than 30 seconds is permitted on a delayed egress door is approved by the department, such sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 30 SECONDS.
 - 6.3. The sign shall comply with the visual character requirements in ICC A117.1.
7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be listed in accordance with UL 294.

Exceptions:

1. Delayed egress locking systems shall not be permitted in buildings or spaces in Group A, E, F and H occupancies. However, in museums, delayed egress locks may be installed on exit doors subject to special review by the commissioner and Fire Commissioner.
2. Places of detention or restraints in Group I-3 are permitted to install delayed egress locking systems without the special review by the commissioner, provided that the installation complies with all of the other requirements of this section.

1010.1.9.8 Sensor release of electrically locked egress doors. The electric locks on sensor released doors located in a means of egress in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Group A, B, E, M, R-1 or R-2 are permitted where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
2. Loss of power to the lock or locking system shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1220 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock—independent of other electronics—and the doors shall remain unlocked for not less than 30 seconds.
4. Activation of the building fire alarm system, where provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.
5. Activation of the building automatic sprinkler system or fire detection system, where provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
6. The door locking system units shall be listed in accordance with UL 294.

1010.1.9.9 Electromagnetically locked egress doors. Doors in the means of egress in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, M, R-1 or R-2 shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and where installed and operated in accordance with all of the following:

1. The hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.

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2. The hardware is capable of being operated with one hand.
3. Operation of the hardware directly interrupts the power to the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the electromagnetic locking system automatically unlocks the door to permit egress.
5. Where panic or fire exit hardware is required by Section 1010.1.10, operation of the panic or fire exit hardware also releases the electromagnetic lock.
6. The locking system units shall be listed in accordance with UL 294.

1010.1.9.10 Locking arrangements in correctional facilities. In occupancies in Groups A-2, A-3, A-4, B, E, F, I-2, I-3, M and S within correctional and detention facilities, doors in means of egress serving rooms or spaces occupied by persons whose movements are controlled for security reasons shall be permitted to be locked where equipped with egress control devices that shall unlock manually and by not less than one of the following means:

1. Activation of an automatic sprinkler system installed in accordance with Section 903.3.1.1.
2. Activation of an approved manual fire alarm box.
3. A signal from a constantly attended location.

1010.1.9.11 Stairway doors. Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side.
2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
3. In stairways serving not more than four stories, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.
4. This section shall not apply to buildings permitted to be served by one exit in accordance with Item 5 or 6 of Section 1006.3.2.
5. In schools classified as Group E occupancies that require lockdown drills as per New York State Education Law 807, stairway egress doors from occupied spaces are permitted to be locked from the side opposite the egress side for the duration of the lockdown drill, provided that they are openable from the occupied side for egress and are unlocked upon directions from the school administrative personnel following the completion of the lockdown drill.

1010.1.10 Panic and fire exit hardware. Doors serving the following shall not be provided with a latch or lock other than panic hardware or fire exit hardware:

1. Group H occupancies;
2. A room or space with an occupant load of 75 or more in a Group A or E occupancy;
3. A building or nonaccessory tenant space used for assembly purposes that is permitted to be classified as a Group B occupancy pursuant to Section 303.1.2; and
4. An accessory room or space used for assembly purposes where permitted to be classified as a Group B occupancy or as part of the occupancy it is accessory to, pursuant to Section 303.1.3.

Exceptions:

1. A main exit of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.
2. Doors serving a Group A or E occupancy shall be permitted to be electromagnetically locked in accordance with Section 1010.1.9.9.

1010.1.10.1 Rooms with electrical equipment. Exit or exit access doors serving transformer vaults, rooms designated for batteries or energy storage systems, or modular data centers shall be equipped with panic

hardware or fire exit hardware. Where rooms contain electrical rooms with equipment rated 800 amperes or more that contain overcurrent devices, switching devices or control devices and where the exit or exit access door is less than 25 feet (7629 mm) from the equipment working space, shall be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.

1010.1.10.2 Refrigeration machinery room. Swinging doors in refrigeration machinery rooms, where required by Section 1006.2.2.3, shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

1010.1.10.3 Installation. Where panic or fire exit hardware is installed, it shall comply with the following:

1. Panic hardware shall be listed in accordance with UL 305.
2. Fire exit hardware shall be listed in accordance with UL 10C and UL 305.
3. The actuating portion of the releasing device shall extend not less than one-half of the door leaf width.
4. The maximum unlatching force shall not exceed 15 pounds (66.7 N).

1010.1.10.4 Balanced doors. If balanced doors are used and panic hardware is required, the panic hardware shall be the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

1010.2 Gates. Gates serving the means of egress system shall comply with the requirements of this section. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

Exception: Horizontal sliding or swinging gates exceeding the 4-foot (1220 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.

1010.2.1 Stadiums. Panic hardware is not required on gates surrounding stadiums where such gates are under constant immediate supervision while the public is present, and where safe dispersal areas based on 3 square feet (0.28 m²) per occupant are located between the fence and enclosed space. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from the enclosed space. See Section 1028.5 for means of egress from safe dispersal areas.

††† **1010.3 Turnstiles.** Turnstiles or similar devices that restrict travel to one direction shall not be placed so as to obstruct any required means of egress. Where portable turnstiles are installed for ticketing purposes, such turnstiles shall be moved from the egress path for proper exiting.

Exceptions:

1. **Manually-operated turnstiles.** Manually-operated turnstiles that consist of revolving devices that turn freely in the direction of exit travel may be used in any occupancy where revolving doors are permitted. Each manually-operated turnstile or similar device shall be credited with no more than a 50-person capacity where all of the following provisions are met:
 - 1.1. Each device shall turn free manually in the direction of egress travel when primary power is lost, and upon the manual release by an employee in the area.
 - 1.2. Such devices are not given credit for more than 50 percent of the required egress capacity or width.
 - 1.3. Each device is not more than 39 inches (990.6 mm) high.
 - 1.4. Each device has not less than 16½ inches (419.1 mm) clear width at and below a height of 39 inches (990.6 mm) and not less than 22 inches (558.8 mm) clear width at heights above 39 inches (990.6 mm).
 - 1.5. Where located as part of an accessible route, turnstiles shall have not less than 36 inches (914.4 mm) clear at and below a height of 34 inches (863.4 mm), not less than 32 inches (812.8 mm) clear width between 34 inches (863.4 mm) and 80 inches (2032 mm) and shall consist of a mechanism other than a revolving device.
2. **Automatic turnstiles.** Automatic turnstiles that consist of mechanisms other than revolving devices, and are operated by power, such as turnstiles with a photoelectric-actuated mechanism to open the turnstile upon the approach of a person, may be used in any occupancy where revolving doors are permitted. Automatic turnstiles may serve a means of egress system where all of the following provisions are met:

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- 2.1. Each automatic turnstile shall have minimum widths sufficient for the occupant load served and shall provide at least 32 inches (812.8 mm) of clear width at and below a height of 80 inches (2032 mm).
- 2.2. The design shall be such that in the event of power failure, each automatic turnstile is capable of breaking away manually to permit means of egress travel. The force required to break away these turnstiles manually shall not exceed 13 pounds (57.8 N). The turnstile shall be capable of swinging from any position to the full, clear opening width of the turnstile when a force is applied to the turnstile on the side from which egress is made.
- 2.3. Each automatic turnstile shall be operable from the egress side without special knowledge or effort.
- 2.4. Each automatic turnstile shall be connected to the building fire alarm system. Activation of the building fire alarm system shall automatically release each such turnstile to its full, clear opening width, and each such turnstile shall remain in its open position until the fire alarm system has been reset.
- 2.5. Each automatic turnstile shall, upon actuation of a manual release device, automatically open to its full, clear opening width, and shall remain in its open position until the automatic turnstile's access control system is reset. The manual release device shall be clearly identified with ready access that results in direct interruption of power to each turnstile. The manual release device shall be positioned at the fire command center or, if a fire command center is not required, at an approved location near the building entrance where the automatic turnstiles are located.
- 2.6. Each automatic turnstile shall have an integrated emergency power supply.
- 2.7. Each automatic turnstile power supply shall be electrically supervised.
- 2.8. Turnstiles provided for egress purposes in numbers greater than the egress capacity required by this code shall meet the requirements of this section.
- 2.9. Where located as part of an accessible route, such turnstiles shall have at least 36 inches (914.4 mm) clear width at and below a height of 34 inches (863.4 mm), at least 32 inches (812.8 mm) clear width between 34 inches (863.4 mm) and 80 inches (2032 mm).

1010.3.1 High turnstile. Turnstiles more than 39 inches (990.6 mm) high shall meet the requirements for revolving doors.

1010.3.2 Additional door. Where serving an occupant load greater than 300, each manually-operated turnstile and automatic turnstile that is not portable shall have a side-hinged swinging door that conforms to Section 1010.1 within 50 feet (15 240 mm).

1010.4 Security requirements for doors and windows. The provisions of Sections 1010.4.1 through 1010.4.4 shall apply to Group R-2 occupancies.

1010.4.1 Entrance doors. Building entrance doors and other exterior exit doors shall be equipped with heavy duty lock sets with auxiliary latch bolts to prevent the latch from being manipulated by means other than a key. Latch sets shall have stop-work in the inside cylinder controlled by a master key only. Outside cylinders of main entrance door locks shall be operated by the tenants' key, which shall not be keyed to also open the tenants' apartment door. A light or lights shall be provided at or near the outside of the front entranceway of the building providing not less than 5-footcandles (53.82 lux) intensity measured at the floor level for the full width of the entranceway.

1010.4.2 Doors to dwelling units. Doors to dwelling units shall be equipped with a heavy duty latch set and a heavy duty dead bolt operable by a key from the outside and a thumb-turn from the inside. Those doors shall also be equipped with a chain guard so as to permit partial opening of the door. Dwelling unit entrance doors shall also be equipped with a viewing device located so as to enable a person on the inside of the entrance door to view a person immediately outside.

1010.4.3 Windows. All openable windows shall be equipped with sash locks designed to be openable from the inside only. Grilles lockable from the inside only may be placed on the inside or outside of windows that are accessible from grade but that do not serve to provide access to exits.

1010.4.4 Intercommunication system. Buildings containing eight or more dwelling units shall be provided with an intercommunication system located at the door giving access to the main entrance lobby, consisting of a device or devices for voice communication between the occupant of each dwelling unit and a person outside the door to the main entrance lobby, and permitting such dwelling unit occupant to release the locking mechanism of said door

from the dwelling unit. In buildings provided with a full-time lobby attendant, the intercommunication system may be between each dwelling unit and the attendant's station.

SECTION BC 1011 STAIRWAYS

1011.1 General. Stairways serving occupied portions of a building shall comply with the requirements of Sections 1011.2 through 1011.13. Alternating tread devices shall comply with Section 1011.14. Ships ladders shall comply with Section 1011.15. Ladders shall comply with Section 1011.16.

Exception: Within rooms or spaces used for assembly purposes, stepped aisles shall comply with Section 1029.

1011.2 Width and capacity. The required capacity of stairways shall be determined as specified in Section 1005, but the minimum width shall be not less than 44 inches (1117.6 mm). See Section 1009.3 for accessible means of egress stairways.

Exceptions:

1. A width of not less than 36 inches (914.4 mm) shall be permitted in:
 - 1.1. A stairway that serves an occupant load of 50 or less cumulative for all stories; or
 - 1.2. A stairway that provides egress to the exit discharge solely for the use of Group R-2 occupancies, provided the building it serves is 125 feet (38 100 mm) or less in height, and provided such a stairway serves not more than 30 occupants per floor.
2. Spiral stairways as provided for in Section 1011.10.
3. Where an inclined platform lift or a stairway chairlift is installed on stairways serving occupancies in Group R-3, or within dwelling units in occupancies in Group R-2, a clear passage width not less than 20 inches (508 mm) shall be provided. Where the seat and platform can be folded when not in use, the distance shall be measured from the folded position.

1011.3 Headroom. Stairways shall have a headroom clearance of not less than 84 inches (2133.6 mm) measured vertically from a line connecting the edge of the nosings. Such headroom shall be continuous above the stairway to the point where the line intersects the landing below, one tread depth beyond the bottom riser. The minimum clearance shall be maintained the full width of the stairway and landing. Projections into the required width shall not be limited above the minimum headroom height.

Exceptions:

1. In Group R-2 and R-3 occupancies stairways shall have a headroom clearance of not less than 80 inches (2032 mm).
2. Spiral stairways complying with Section 1011.10 are permitted a 78-inch (1981.2 mm) headroom clearance.
3. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom not more than $4\frac{3}{4}$ inches (120.7 mm).

1011.4 Walkline. The walkline across winder treads shall be concentric to the direction of travel through the turn and located 12 inches (304.8 mm) from the side where the winders are narrower. The 12-inch (304.8 mm) dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder. Where winders are adjacent within the flight, the point of the widest clear stair width of the adjacent winders shall be used.

1011.5 Stair treads and risers. Stair treads and risers shall comply with Sections 1011.5.1 through 1011.5.5.3.

1011.5.1 Dimension reference surfaces. For the purpose of this section, all dimensions are exclusive of carpets, rugs or runners.

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1011.5.2 Riser height and tread depth. Stair riser heights shall be 7 inches (177.8 mm) maximum and 4 inches (101.6 mm) minimum. The riser height shall be measured vertically between the nosings of adjacent treads. Rectangular tread depths shall be 11 inches (279.4 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's nosing. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch (9.5 mm). Winder treads shall have a minimum tread depth of 11 inches (279.4 mm) between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.

Exceptions:

1. Spiral stairways in accordance with Section 1011.10.
2. Stairways connecting stepped aisles to cross aisles or concourses shall be permitted to use the riser/tread dimension in Section 1029.13.2.
3. In Group R-2 occupancies:
 - 3.1. Sum of treads and risers. The sum of two risers plus one tread exclusive of nosing shall be not less than 24 inches (609.6 mm) nor more than $25\frac{1}{2}$ inches (647.7 mm).
 - 3.2. Dimensions of treads and risers. The maximum riser height shall be $7\frac{3}{4}$ inches (196.85 mm) and the minimum tread depth shall be $9\frac{1}{2}$ inches (241.3 mm) plus nosing. Treads may be undercut a distance equal to the nosing. A nosing not less than $\frac{3}{4}$ inch (19 mm) but not more than $1\frac{1}{4}$ inches (31.8 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279.4 mm).
 - 3.3. Tolerances. The greatest riser height, tread depth, and nosing projection, within any flight of stairs shall not exceed the smallest by more than $\frac{3}{4}$ inch (9.5 mm).
4. In Group R-3 occupancies; and in Group U occupancies that are accessory to Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies:
 - 4.1. Sum of treads and risers. The sum of two risers plus one tread exclusive of nosing shall be not less than 24 inches (609.6 mm) nor more than $25\frac{1}{2}$ inches (647.7 mm).
 - 4.2. Dimensions of treads and risers. The maximum riser height shall be $8\frac{1}{4}$ inches (209.6 mm) and the minimum tread depth shall be 9 inches (228.6 mm) plus nosing. Treads may be undercut a distance equal to the nosing. A $1\frac{1}{4}$ -inch (31.75 mm) nosing shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279.4 mm).
 - 4.3. Tolerances. The greatest riser height, tread depth, and nosing projection, within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch (9.5 mm).
5. In Group R-3 occupancies; and within dwelling units in Group R-2 occupancies; winders shall have a minimum tread depth of 10 inches (254 mm) measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge, when measured at a point 12 inches (304.8 mm) from the side where the treads are narrower. Winder treads shall have a minimum tread depth of 6 inches (152.4 mm) at any point. Within any flight of stairs, the greatest winder tread depth at the 12-inch (304.8 mm) walk line shall not exceed the smallest by more than $\frac{3}{8}$ inch (9.5 mm).
6. In Group I-3 facilities, stairways providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23.2 m²) in area, shall be permitted to have a maximum riser height of 8 inches (203.2 mm) and a minimum tread depth of 9 inches (228.6 mm).

1011.5.3 Winder treads. Winder treads are not permitted in means of egress stairways except within a dwelling unit.

Exceptions:

1. Curved stairways in accordance with Section 1011.9.
2. Spiral stairways in accordance with Section 1011.10.

1011.5.4 Dimensional uniformity. Stair treads and risers shall be of uniform size and shape. The tolerance between the largest and smallest riser height or between the largest and smallest tread depth shall not exceed $\frac{3}{8}$ inch (9.5 mm).

mm) in any flight of stairs. The greatest winder tread depth at the walkline within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch (9.5 mm).

Exceptions:

1. Stairways connecting stepped aisles to cross aisles or concourses shall be permitted to comply with the dimensional nonuniformity in Section 1029.13.2.
2. Consistently shaped winders, complying with Section 1011.5, differing from rectangular treads in the same flight of stairs.
3. Where the bottom or top riser adjoins a sloping public way, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches (101.6 mm) in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of stair width. The nosings or leading edges of treads at such nonuniform height risers shall have a distinctive marking stripe, different from any other nosing marking provided on the stair flight. The distinctive marking stripe shall be visible in descent of the stair and shall have a slip-resistant surface. Marking stripes shall have a width of not less than 1 inch (25.4 mm) but not more than 2 inches (50.8 mm).

1011.5.5 Nosing and riser profile. Nosings shall have a curvature or bevel of not less than $\frac{1}{16}$ inch (1.6 mm) but not more than $\frac{9}{16}$ inch (14.3 mm) from the foremost projection of the tread. Risers shall be solid and vertical or sloped under the tread above from the underside of the nosing above at an angle not more than 30 degrees (0.52 rad) from the vertical.

1011.5.5.1 Nosing projection size. The leading edge (nosings) of treads shall project not more than $1\frac{1}{4}$ inches (31.75 mm) beyond the tread below.

1011.5.5.2 Nosing projection uniformity. Nosing projections of the leading edges shall be of uniform size, including the projections of the nosing's leading edge of the floor at the top of a flight.

1011.5.5.3 Solid risers. Risers shall be solid. Perforated risers with openings not exceeding $\frac{1}{4}$ inch (6.4 mm) shall be considered solid risers.

Exceptions:

1. Solid risers are not required for stairways that are not serving as exits or that are not required to comply with Section 1009.3, provided that the opening between treads does not permit the passage of a sphere with a diameter of 4 inches (101.6 mm).
2. Solid risers are not required for occupancies in Group I-3 or in Group F, H and S occupancies other than areas accessible to the public. There are no restrictions on the size of the opening in the riser.
3. In Group R-3 occupancies, the following shall apply:
 - 3.1. The radius of curvature at the leading edge of the tread shall be no greater than $\frac{9}{16}$ inch (14.3 mm).
 - 3.2. Solid risers are not required provided that the opening between treads does not permit the passage of a sphere with a diameter of 4 inches (101.6 mm). However, the opening between treads is not limited on stairways with a total rise of 30 inches (762 mm) or less.
4. Solid risers are not required for spiral stairways constructed in accordance with Section 1011.10.
5. Solid risers are not required for alternating tread devices constructed in accordance with Section 1011.14.

1011.6 Stairway landings. There shall be a floor or landing at the top and bottom of each stairway. The width of landings shall be not less than the width of stairways served. Every landing shall have a minimum width measured perpendicular to the direction of travel equal to the width of the stairway. Where the stairway has a straight run, the depth need not exceed 48 inches (1220 mm). Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches (177.8 mm) into a landing. When wheelchair spaces are required on the stairway landing in accordance with Section 1009.6.3, the wheelchair space shall not be located in the required width of the landing and doors shall not swing over the wheelchair spaces.

Exception: Where stairways connect stepped aisles to cross aisles or concourses, stairway landings are not required at the transition between stairways and stepped aisles constructed in accordance with Section 1029.

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1011.7 Stairway construction. Stairways shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction.

1011.7.1 Stairway walking surface. The walking surface of treads and landings of a stairway shall not be sloped steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Stairway treads and landings shall have a solid surface. Finish floor surfaces shall be securely attached.

Exceptions:

1. Openings in stair walking surfaces shall be a size that does not permit the passage of $\frac{1}{2}$ -inch (12.7 mm) diameter sphere. Elongated openings shall be placed so that the long dimension is perpendicular to the direction of travel.
2. In Group F, H and S occupancies, other than areas of parking structures accessible to the public, openings in treads and landings shall not be prohibited provided a sphere with a diameter of $1\frac{1}{8}$ inches (28.6 mm) cannot pass through the opening.

1011.7.2 Outdoor conditions. Outdoor stairways and outdoor approaches to stairways shall be designed so that water will not accumulate on walking surfaces. In occupancies other than Group R-3 and occupancies in Group U that are accessory to an occupancy in Group R-3, treads, platforms and landings that are part of exterior stairways in climates subject to snow or ice shall be protected to prevent the accumulation of same.

1011.7.3 Enclosures under interior stairways. The walls and soffits within enclosed usable spaces under enclosed and unenclosed stairways shall be protected by 1-hour fire-resistance-rated construction or the fire-resistance rating of the stairway enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the stairway enclosure.

Exception: Spaces under stairways serving and contained within a single residential dwelling unit in Group R-2 or R-3 shall be permitted to be protected on the enclosed side with $\frac{1}{2}$ -inch (12.7 mm) gypsum board.

1011.7.4 Enclosures under exterior stairways. There shall not be enclosed usable space under exterior exit stairways unless the space is completely enclosed in 1-hour fire-resistance-rated construction. The open space under exterior stairways shall not be used for any purpose.

1011.8 Vertical rise. A flight of stairs shall not have a vertical rise greater than 12 feet (3657.6 mm) between floor levels or landings.

Exceptions:

1. Aisle stairs complying with Section 1029.
2. Alternating tread devices complying with Section 1011.14.
3. Spiral stairways used as a means of egress from technical production areas.

1011.9 Curved stairways. Curved stairways with winder treads shall have treads and risers in accordance with Section 1011.5 and the smallest radius shall be not less than twice the minimum width or required capacity of the stairway, whichever is greater.

Exception: The radius restriction shall not apply to curved stairways in Group R-3 and within individual dwelling units in Group R-2.

1011.10 Spiral stairways. Spiral stairways are permitted to be used as a component in the means of egress only within dwelling units or from a space not more than 250 square feet (23.2 m²) in area and serving not more than five occupants, or from technical production areas in accordance with Section 410.6.

A spiral stairway shall have a $7\frac{1}{2}$ -inch (190.5 mm) minimum clear tread depth at a point 12 inches (304.8 mm) from the narrow edge. The risers shall be sufficient to provide a headroom of 78 inches (1981.2 mm) minimum, but riser height shall not be more than $9\frac{1}{2}$ inches (241.3 mm). The minimum stairway clear width at and below the handrail shall be 26 inches (660.4 mm).

1011.11 Handrails. Stairways shall have handrails on each side and shall comply with Section 1014. Where glass is used to provide the handrail, the handrail shall also comply with Section 2407.

Exceptions:

1. Stairways within dwelling units and spiral stairways are permitted to have a handrail on one side only.
2. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails.
3. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails.
4. Changes in room elevations of only one riser within dwelling units and sleeping units in Group R-2 and R-3 do not require handrails.
5. One handrail shall be allowed in enclosed interior exit stairways less than 44 inches (1117.6 mm) wide that do not serve as an accessible means of egress.
6. Handrails for ramped aisles and stepped aisles shall comply with Section 1029.15.

1011.12 Stairway to roof and roof access. In buildings four or more stories or more than 40 feet (12 192 mm) in height above grade, one stairway shall extend to the roof surface through a stairway bulkhead complying with Section 1510.2, unless the roof has a slope steeper than 20 degrees (0.35 rad). Access to setback roof areas may be through a door or window opening to the roof. Stairways terminating at the level of a setback shall provide access to the setback roof areas, except where the setback is less than 4 feet (1220 mm) in width and 10 feet (3048 mm) in length, measured from the inside of the parapet wall.

††† 1011.12.1 Occupancy Groups I-1, R-1 and R-2. In buildings in Occupancy Groups I-1, R-1 and R-2 two stories or more in height, with roofs having a slope of 15 degrees (0.26 rad) or less, all interior exit stairways, except those terminating at the level of a setback roof, shall extend to the roof surface.

Exceptions:

1. In buildings in Occupancy Groups R-1 and R-2 that are two stories in height and in Occupancy Group R-2 that are three stories in height with not more than one dwelling unit per story, access to the roof shall be permitted to be a noncombustible roof hatch or trap door not less than 21 inches (533.4 mm) in width and 28 inches (711.2 mm) in length. Such hatches shall be located within the interior exit stairway enclosure and be provided with a stationary, noncombustible access ladder or alternating tread device.
2. In buildings in Occupancy Group R-2 complying with Item 6 of Section 1006.3.2, roof access shall be governed by Item 6.6 of such section.

1011.12.2 Stairway to elevator equipment. Roofs and penthouses containing elevator equipment that must be accessed for maintenance are required to be accessed by a stairway.

1011.13 Guards. Guards shall be provided along stairways and landings where required by Section 1015 and shall be constructed in accordance with Section 1015. Where the roof hatch opening providing the required access is located within 10 feet (3049 mm) of the roof edge, such roof access or roof edge shall be protected by guards installed in accordance with Section 1015.

1011.14 Alternating tread devices. Alternating tread devices are limited to an element of a means of egress in buildings of Groups F, H and S from a mezzanine not more than 250 square feet (23.2 m²) in area and that serves not more than five occupants; in buildings of Group I-3 from a guard tower, observation station or control room not more than 250 square feet (23.2 m²) in area and for access to unoccupied roofs. Alternating tread devices used as a means of egress shall not have a rise greater than 20 feet (6096 mm) between floor levels or landings.

1011.14.1 Handrails of alternating tread devices. Handrails shall be provided on both sides of alternating tread devices and shall comply with Section 1014.

1011.14.2 Treads of alternating tread devices. Alternating tread devices shall have a minimum tread depth of 5 inches (127 mm), a minimum projected tread depth of 8½ inches (215.9 mm), a minimum tread width of 7 inches (177.8 mm) and a maximum riser height of 9½ inches (241.3 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projections of adjacent treads. The riser height shall be measured vertically between the leading edges of adjacent treads. The riser height and tread depth provided shall result in an

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angle of ascent from the horizontal of between 50 and 70 degrees (0.87 and 1.22 rad). The initial tread of the device shall begin at the same elevation as the platform, landing or floor surface.

Exception: Alternating tread devices used as an element of a means of egress in buildings from a mezzanine area not more than 250 square feet (23.2 m²) in area that serves not more than five occupants shall have a minimum tread depth of 3 inches (76.2 mm) with a minimum projected tread depth of 10½ inches (267 mm). The rise to the next alternating tread surface shall not exceed 8 inches (203.2 mm).

1011.15 Ships ladders. Ships ladders are permitted to be used in Group I-3 as a component of a means of egress to and from control rooms or elevated facility observation stations not more than 250 square feet (23.2 m²) with not more than three occupants and for access to unoccupied roofs. The minimum clear width at and below the handrails shall be 20 inches (508 mm).

1011.15.1 Handrails of ships ladders. Handrails shall be provided on both sides of ships ladders.

1011.15.2 Treads of ships ladders. Ships ladders shall have a minimum tread depth of 5 inches (127 mm). The tread shall be projected such that the total of the tread depth plus the nosing projection is not less than 8½ inches (215.9 mm). The maximum riser height shall be 9½ inches (241.3 mm).

1011.16 Ladders. Permanent ladders shall not serve as a part of the means of egress from occupied spaces within a building. Permanent ladders constructed in accordance with Section 306.5 of the *New York City Mechanical Code* shall be permitted to provide access to the following areas:

1. Spaces frequented only by personnel for maintenance, repair or monitoring of equipment.
2. Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.
3. Raised areas used primarily for purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands.
4. Elevated levels in Group U not open to the general public.
5. Roofs that are permitted to have noncombustible access ladders in accordance with Section 1011.12.1.
6. Technical production areas in assembly occupancies.

SECTION BC 1012 RAMPS

1012.1 Scope. The provisions of this section shall apply to ramps used as a component of a means of egress.

Exceptions:

1. Other than ramps that are part of the accessible routes providing access in accordance with Sections 1108.2 through 1108.2.4 and 1108.2.6, ramped aisles within assembly rooms or spaces shall comply with the provisions in Section 1029.
2. Curb ramps shall comply with ICC A117.1.
3. Vehicle ramps in parking garages for pedestrian exit access shall not be required to comply with Sections 1012.3 through 1012.10 where they are not an accessible route serving accessible parking spaces, other required accessible elements or part of an accessible means of egress.

1012.2 Slope. Ramps used as part of a means of egress or part of an accessible route shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-percent slope). The slope of other pedestrian ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

Exceptions:

1. Aisle ramp slope in occupancies of Group A shall comply with Section 1029.13.
2. In garages three stories or less in height and serving not more than one level below grade, ramps with a maximum slope of one unit vertical in seven units horizontal (14-percent slope) may serve as part of a non-accessible means of egress.

1012.3 Cross slope. The slope measured perpendicular to the direction of travel of a ramp shall not be steeper than one unit vertical in 48 units horizontal (2-percent slope).

1012.4 Vertical rise. The rise for any ramp run shall be 30 inches (762 mm) maximum.

1012.5 Minimum dimensions. The minimum dimensions of means of egress ramps shall comply with Sections 1012.5.1 through 1012.5.3.

1012.5.1 Width and capacity. The minimum width and required capacity of a means of egress ramp shall be not less than that required for corridors by Section 1020.2. The clear width of a ramp between handrails, if provided, or other permissible projections shall be 36 inches (914.4 mm) minimum.

1012.5.2 Headroom. The minimum headroom in all parts of the means of egress ramp shall be not less than 84 inches (2133.6 mm).

1012.5.3 Restrictions. Means of egress ramps shall not reduce in width in the direction of egress travel. Projections into the required ramp and landing width are prohibited. Doors opening onto a landing shall not reduce the clear width to less than 42 inches (1066.8 mm).

1012.6 Landings. Ramps shall have landings at the bottom and top of each ramp, points of turning, entrance, exits and at doors. Landings shall comply with Sections 1012.6.1 through 1012.6.5.

1012.6.1 Slope. Landings shall have a slope not steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Changes in level are not permitted.

1012.6.2 Width. The landing width shall be not less than the width of the widest ramp run adjoining the landing.

1012.6.3 Length. The landing length shall be 60 inches (1525 mm) minimum.

Exceptions:

1. In Group R-2 and R-3 individual dwelling and sleeping units that are not required to be Accessible units, Type B+NYC units or Type B units in accordance with Section 1107, landings are permitted to be 36 inches (914.4 mm) minimum.
2. Where the ramp is not a part of an accessible route, the length of the landing shall not be required to be more than 48 inches (1220 mm) in the direction of travel.

1012.6.4 Change in direction. Where changes in direction of travel occur at landings provided between ramp runs, the landing shall be 60 inches by 60 inches (1524 mm by 1524 mm) minimum.

Exception: In Group R-2 and R-3 individual dwelling or sleeping units that are not required to be Accessible units, Type B+NYC units or Type B units in accordance with Section 1107, landings are permitted to be 36 inches by 36 inches (914.4 mm by 914.4 mm) minimum.

1012.6.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by ICC A117.1 are permitted to overlap the required landing area.

1012.7 Ramp construction. Ramps shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction.

1012.7.1 Ramp surface. The surface of ramps shall be of slip-resistant materials that are securely attached.

1012.7.2 Outdoor conditions. Outdoor ramps and outdoor approaches to ramps shall be designed so that water will not accumulate on walking surfaces. In other than occupancies in Group R-3, and occupancies in Group U that are accessory to an occupancy in Group R-3, surfaces and landings which are part of exterior exit ramps in climates subject to snow or ice shall be designed to minimize the accumulation of same.

1012.8 Handrails. Ramps with a rise greater than 6 inches (152.4 mm) shall have handrails on both sides. Handrails shall comply with Section 1014.

Exception: Handrails for ramped aisles are not required where permitted by Section 1029.15.

1012.9 Guards. Guards shall be provided where required by Section 1015 and shall be constructed in accordance with Section 1015. Such guards may be used to satisfy the requirement of edge protection of Section 1012.10.

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1012.10 Edge protection. Edge protection complying with Section 1012.10.1 shall be provided on each side of ramp runs and at each side of ramp landings not adjoining another ramp run or stairway.

Exceptions:

1. Edge protection is not required on ramps that are not required to have handrails, provided they have flared sides that comply with the ICC A117.1 curb ramp provisions.
2. Edge protection is not required on the sides of ramp landings having a vertical dropoff of not more than $\frac{1}{2}$ inch (12.7 mm) within 10 inches (254 mm) horizontally of the required landing area.
3. Edge protection is not required where the floor or ground surface of the ramp run or landing extends 12 inches (304.8 mm) minimum beyond the inside face of handrail complying with Section 1014.

1012.10.1 Curb, rail, wall or barrier. A curb, rail, wall or barrier serving as edge protection shall be provided as follows:

1. Solid barriers. Solid barriers shall extend at least 4 inches (101.6 mm) from the floor or ground surface.
2. Other types of barriers. Other types of barriers shall prevent the passage of a 4-inch (101.6 mm) diameter sphere, where any portion of the sphere is within 4 inches (101.6 mm) of the floor or ground surface.

SECTION BC 1013 EXIT SIGNS

1013.1 Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. The path of egress travel to exits and within exits shall be marked by readily visible exit signs to clearly indicate the direction of egress travel in cases where the exit or the path of egress travel is not immediately visible to the occupants. Intervening means of egress doors within exits shall be marked by exit signs. Exit sign placement shall be such that no point in an exit access corridor or exit passageway is more than 100 feet (30 480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.

Exceptions:

1. Exit signs are not required in rooms or areas that require only one exit or exit access.
2. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group I-1 or R. However, in a congregate living unit where the occupancy of such unit exceeds four people, exit signs shall be provided.
3. Exit signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in Group I-3.
4. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Such vomitories shall be provided with emergency egress lighting to identify each vomitory or opening within the seating area.

1013.1.1 Signs within exits in high-rise buildings. In high-rise buildings subject to Section 403, exit signs shall be placed within exits at horizontal extensions to indicate the transition from vertical to horizontal direction at turns along the horizontal path.

1013.2 Floor-level exit signs in Group R-1. Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5.

The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 12 inches (304.8 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where mounted on the wall, the edge of the sign shall be within 4 inches (101.6 mm) of the door frame on the latch side.

1013.3 Illumination. Exit signs shall be internally or externally illuminated.

Exception: Tactile signs required by Section 1013.4 need not be provided with illumination.

1013.4 Raised character and braille exit signs. A sign stating “EXIT” in visual characters, raised characters and braille and complying with ICC A117.1 shall be provided adjacent to each door to an area of rescue assistance, an exterior area for assisted rescue, an exit stairway or ramp, an exit passageway, a horizontal exit and the exit discharge.

1013.5 Internally illuminated exit signs. Electrically powered exit signs shall be listed and labeled in accordance with UL 924, except that letters of exit signs shall be red. Exit signs shall be installed in accordance with the manufacturer’s instructions and Chapter 27 of this code. Exit signs shall be illuminated at all times. The letters of exit signs shall be red.

1013.5.1 Graphics. The height of letters shall be not less than 6 inches (152.4 mm), except that in Group A and Group R-1 occupancies letters shall be not less than 8 inches (203.2 mm) high. Graphics shall have letter widths, strokes and spacing in proportion to their height.

1013.6 Externally illuminated exit signs. Externally illuminated exit signs shall comply with Sections 1013.6.1 through 1013.6.3.

1013.6.1 Graphics. Every exit sign and directional exit sign shall have plainly legible letters not less than 6 inches (152.4 mm) high with the principal strokes of the letters not less than $\frac{3}{4}$ inch (19.1 mm) wide. The word “EXIT” shall have letters having a width not less than 2 inches (50.8 mm) wide, except the letter “I,” and the minimum spacing between letters shall be not less than $\frac{3}{8}$ inch (9.5 mm). In Group A and R-1 occupancies letters shall be not less than 8 inches (203.2 mm) high. Signs larger than the minimum established in this section shall have letter widths, strokes and spacing in proportion to their height.

The word “EXIT” shall be in high contrast with the background and shall be clearly discernible when the means of exit sign illumination is or is not energized. The letters of exit signs shall be red. If a chevron directional indicator is provided as part of the exit sign, the construction shall be such that the direction of the chevron directional indicator cannot be readily changed.

1013.6.2 Exit sign illumination. The face of an exit sign illuminated from an external source shall have an intensity of not less than 25 footcandles (269.1 lux).

1013.6.3 Power source. Exit signs shall be illuminated at all times. To ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the sign illumination means shall be connected to an emergency power system provided from storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27.

SECTION BC 1014 HANDRAILS

1014.1 Where required. Handrails serving stairways, ramps, stepped aisles and ramped aisles shall be adequate in strength and attachment in accordance with Section 1607.8. Handrails required for stairways by Section 1011.11 shall comply with Sections 1014.2 through 1014.9. Handrails required for ramps by Section 1012.8 shall comply with Sections 1014.2 through 1014.8. Handrails for stepped aisles and ramped aisles required by Section 1029.15 shall comply with Sections 1014.2 through 1014.8.

1014.2 Height. Handrail height, measured above stair tread nosings, or finish surface of ramp slope, shall be uniform, not less than 34 inches (863.4 mm) and not more than 38 inches (965.2 mm). Handrail height of alternating tread devices and ships ladders, measured above tread nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (863.4 mm).

Exceptions:

1. Where handrail fittings or bendings are used to provide continuous transition between flights, the fittings or bendings shall be permitted to exceed the maximum height.
2. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are associated with a Group R-3 occupancy or associated with individual dwelling units in Group R-2 occupancies; where handrail fittings or bendings are used to provide continuous transition between flights,

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transition at winder treads, transition from handrail to guard, or where used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height.

3. Top surface of a guard where permitted to be used as a handrail along stepped aisles and ramped aisles in accordance with Section 1029.15.

1014.3 Handrail graspability. Required handrails shall comply with Section 1014.3.1 or shall provide equivalent graspability.

Exception: In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; handrails shall be Type I in accordance with Section 1014.3.1, Type II in accordance with Section 1014.3.2, or shall provide equivalent graspability.

1014.3.1 Type I. Handrails with a circular cross section shall have an outside diameter of not less than 1¹/₄ inches (31.75 mm) and not greater than 2 inches (50.8 mm). Where the handrail is not circular, it shall have a perimeter dimension of not less than 4 inches (101.6 mm) and not greater than 6¹/₄ inches (158.75 mm) with a maximum cross-sectional dimension of 2¹/₄ inches (57.15 mm) and minimum cross-sectional dimension of 1 inch (25.4 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

1014.3.2 Type II. Handrails with a perimeter greater than 6¹/₄ inches (158.75 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ³/₄ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of not less than ⁵/₁₆ inch (7.9 mm) within ⁷/₈ inch (22 mm) below the widest portion of the profile. This required depth shall continue for not less than ³/₈ inch (9.6 mm) to a level that is not less than 1³/₄ inches (44.5 mm) below the tallest portion of the profile. The width of the handrail above the recess shall be not less than 1¹/₄ inches (31.75 mm) to not greater than of 2³/₄ inches (69.9 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

1014.4 Continuity. Handrail gripping surfaces shall be continuous, without interruption by newel posts or other obstructions.

Exceptions:

1. Handrails within dwelling units are permitted to be interrupted by a newel post at a turn or landing.
2. Within a dwelling unit, the use of a volute, turnout, starting easing or starting newel is allowed over the lowest tread.
3. Handrail brackets or balusters attached to the bottom surface of the handrail that do not project horizontally beyond the sides of the handrail within 1¹/₂ inches (38.1 mm) of the bottom of the handrail shall not be considered obstructions. For each ¹/₂ inch (12.7 mm) of additional handrail perimeter dimension above 4 inches (101.6 mm), the vertical clearance dimension of 1¹/₂ inches (38.1 mm) shall be permitted to be reduced by ¹/₈ inch (3.2 mm).
4. Where handrails are provided along walking surfaces with slopes not steeper than 1:20 (5-percent slope), the bottoms of the handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.
5. Handrails serving stepped aisles or ramped aisles are permitted to be discontinuous in accordance with Section 1029.15.1.

1014.5 Fittings. Handrails shall not rotate within their fittings.

1014.6 Handrail extensions. Handrails shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent flight of stairs or ramp run. Where handrails are not continuous between flights, the handrails shall extend horizontally not less than 12 inches (304.8 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. At ramps where handrails are not continuous between runs, the handrails shall extend horizontally above the landing 12 inches (304.8 mm) minimum beyond the top and bottom of ramp runs. The extensions of handrails shall be in the same direction of the flights of stairs at stairways and the ramp runs at ramps.

Exceptions:

1. Handrails within a dwelling unit that is not an Accessible unit, Type B+NYC unit, or Type B unit need extend only from the top riser to the bottom riser.
2. Handrails within a Type B+NYC multistory dwelling unit that complies with Section 1107.2.5, Items 1 through 3, need extend only from the top riser to the bottom riser.
3. Handrails serving aisles in rooms or spaces used for assembly purposes are permitted to comply with the handrail extensions in accordance with Section 1029.15.
4. Handrails for alternating tread devices and ships ladders are permitted to terminate at a location vertically above the top and bottom risers. Handrails for alternating tread devices and ship ladders are not required to be continuous between flights or to extend beyond the top or bottom risers.

1014.7 Clearance. Clear space between a handrail and a wall or other surface shall be not less than 1½ inches (38.1 mm). A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements.

1014.8 Projections. On ramps and on ramped aisles that are part of an accessible route, the clear width between handrails shall be 36 inches (914.4 mm) minimum. Projections into the required width of aisles, stairways and ramps at each side shall not exceed 4½ inches (114.3 mm) at or below the handrail height. Projections into the required width shall not be limited above the minimum headroom height required in Section 1011.3. Projections due to intermediate handrails shall not constitute a reduction in the egress width.

Exception: The available egress width shall be reduced by the distance between the closest edges of a pair of intermediate handrails where:

1. Such pair of intermediate handrails are provided within the stairway width without a walking surface between the pair; and
2. The distance between the closest edges of such pair of intermediate handrails is greater than 6 inches (152.4 mm).

1014.9 Intermediate handrails. Stairways shall have intermediate handrails located in such a manner that all portions of the stairway minimum width or required capacity are within 30 inches (762 mm) of a handrail. On monumental stairs, handrails shall be located along the most direct path of egress travel.

SECTION BC 1015 GUARDS

1015.1 General. Guards shall comply with the provisions of Sections 1015.2 through 1015.7. Operable windows with sills located more than 72 inches (1828.8 mm) above finished grade or other surface below shall comply with Section 1015.8.

1015.2 Where required. Guards adequate in strength and attachment in accordance with Section 1607.8 shall be located along open-sided walking surfaces that are more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914.4 mm) horizontally to the edge of the open side. Such open-sided walking surfaces shall include, but not be limited to, the following:

1. Roofs and setback roofs such as terraces accessible by a stairway, including those required by Section 1011.12;
2. Where protective guards are required on building roofs pursuant to Section 1510.8;
3. Mezzanines;
4. Balconies;
5. Equipment platforms;
6. Aisles;
7. Stairs;
8. Ramps; and
9. Landings.

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Exception: Guards are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including stairs and ramps leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, ramps and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross aisles in accordance with Section 1029.16.2.

1015.2.1 Glazing. Where glass is used to provide a guard or as a portion of the guard system, the guard shall comply with Section 2407. Where the glazing provided does not meet the strength and attachment requirements of Section 1607.8, complying guards shall be located along glazed sides of open-sided walking surfaces.

1015.3 Height. Required guards shall be not less than 42 inches (1066.8 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. Where any portion of fixed seating, fixed planters or similar fixed elements are located within 21 inches (533.4 mm) horizontally of the guards, from the upper most surface of such portion of the fixed seating or fixed element.
3. On stairways and stepped aisles, from the line connecting the leading edges of the tread nosings.
4. On ramps and ramped aisles, from the ramp surface at the guard.

Exceptions:

1. For occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, guards on the open sides of stairs shall have a height not less than 34 inches (863.4 mm) measured vertically from a line connecting the leading edges of the treads.
2. For occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall be not less than 34 inches (863.4 mm) and not more than 38 inches (965.2 mm) measured vertically from a line connecting the leading edges of the treads.
3. The guard height in assembly seating areas shall comply with Section 1029.16 as applicable.
4. Along alternating tread devices and ships ladders, guards where the top rail also serves as a handrail shall have height not less than 30 inches (762 mm) and not more than 34 inches (863.4 mm), measured vertically from the leading edge of the device tread nosing.

1015.4 Opening limitations. Required guards shall not have openings that allow passage of a sphere 4 inches (101.6 mm) in diameter from the walking surface to the required guard height.

Exceptions:

1. From a height of 36 inches (914.4 mm) to 42 inches (1066.8 mm), guards shall not have openings that allow passage of a sphere $4\frac{3}{8}$ inches (111.1 mm) in diameter.
2. The triangular openings at the open sides of a stair, formed by the riser, tread and bottom rail, shall not allow passage of a sphere 6 inches (152.4 mm) in diameter.
3. At elevated walking surfaces that are not open to the public for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall not have openings that allow passage of a sphere 21 inches (533.4 mm) in diameter.

4. In areas that are not open to the public within occupancies in Group I-3, F, H or S, and for alternating tread devices and ships ladders, guards shall not have openings that allow passage of a sphere 21 inches (533.4 mm) in diameter.
5. In assembly seating areas, guards required at the end of aisles in accordance with Section 1029.16.4 shall not have openings that allow passage of a sphere 4 inches (101.6 mm) in diameter up to a height of 26 inches (660.4 mm). From a height of 26 inches (660.4 mm) to 42 inches (1066.8 mm) above the adjacent walking surfaces, guards shall not have openings that allow passage of a sphere 8 inches (203.2 mm) in diameter.
6. Within individual dwelling units and sleeping units in Group R-2 and R-3 occupancies, guards on the open sides of stairs shall not have openings that allow passage of a sphere $4\frac{3}{8}$ inches (111.1 mm) in diameter.

1015.5 Screen porches. Porches and decks that are enclosed with insect screening shall be provided with guards where the walking surface is located more than 30 inches (762 mm) above the floor or grade below.

1015.6 Mechanical equipment, systems and devices. Guards shall be provided where various components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of such components. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533.4 mm) in diameter.

1015.7 Roof access. Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533.4 mm) in diameter.

1015.8 Window sills in Group R-3 occupancies. In one- and two-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1828.8 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 36 inches (914.4 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 36 inches (914.4 mm) shall be fixed or have openings through which a 4-inch (101.6 mm) diameter sphere cannot pass.

Exception: Openings that are provided with window guards that comply with ASTM F 2090.

1015.9 Windows and openings in Group R-2 occupancies. Windows and openings that do not allow passageway onto grade, balcony, terrace, setback, roof or other walking surfaces in Group R-2 occupancies shall be subject to the applicable requirements of the New York City Department of Health and Mental Hygiene with regard to window guards.

SECTION BC 1016 EXIT ACCESS

1016.1 General. The exit access shall comply with the applicable provisions of Sections 1003 through 1015. Exit access arrangement shall comply with Sections 1016 through 1021.

1016.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.

1. Exit access through an enclosed elevator lobby is permitted. Access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the exit unless direct access to an exit is required by other sections of this code.
2. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.

Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

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3. An exit access shall not pass through a room that can be locked to prevent egress.
4. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.
5. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.

Exceptions:

1. Means of egress are not prohibited through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.
2. Means of egress are not prohibited through stockrooms in Group M where all of the following are met:
 - 2.1. The stock is of the same hazard classification as that found in the main retail area.
 - 2.2. Not more than 50 percent of the exit access is through the stockroom.
 - 2.3. The stockroom is not subject to locking from the egress side.
 - 2.4. There is a demarcated, minimum 44-inch (1117.6 mm) wide aisle defined by full- or partial-height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.

1016.2.1 Multiple tenants. Where more than one tenant occupies any one floor of a building or structure, each tenant space, dwelling unit and sleeping unit shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units and sleeping units.

Exception: The means of egress from a smaller tenant space shall not be prohibited from passing through a larger adjoining tenant space where the following conditions are met:

1. Such rooms or spaces of the smaller tenant occupy less than 10 percent of the area of the larger tenant space through which they pass;
2. The larger tenant is a Group M occupancy and the smaller tenant space is of the same or similar occupancy group;
3. A discernible path of egress travel is provided from the smaller tenant space to an exit;
4. The means of egress into the adjoining space is not subject to locking from the egress side of the smaller tenant space; and
5. The smaller tenant space serves the same occupants, customers, or patrons as the larger tenant space.

1016.3 Intervening public hall in Group R-2 occupancies. Buildings in Occupancy Group R-2 shall comply with the intervening public hall requirements in accordance with Sections 1016.3.1 and 1016.3.2.

1016.3.1 Group R-2 nonhigh-rise occupancies. In buildings in Occupancy Group R-2 not subject to Section 403, a door from a dwelling unit shall open into an intervening public hall. Such public hall shall be constructed as a public corridor in accordance with Section 1020. Opening protectives in accordance with Exception 3 of Section 707.6 shall not be permitted.

Exceptions:

1. No intervening public hall shall be required for any of the following:
 - 1.1. A building that is both three stories or less in height, and contains two or fewer dwelling units per story; or
 - 1.2. A building that complies with Item 6 of Section 1006.3.2.
2. No intervening public hall shall be required where the doors opening to the apartments are smoke and draft controlled doors complying with UL 1784 without artificial bottom seals, in accordance with Sections 716.5 and 716.5.7.3 of this code, and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1 of this code. This exception shall not apply to any building that complies with Item 7 of Section 1006.3.2 of this code where there is more than one apartment per story.

††† **1016.3.2 Group R-2 high-rise occupancies.** In high-rise buildings in Occupancy Group R-2, all doors from a dwelling unit shall open into an intervening public hall. Such public hall shall be constructed as a public corridor

in accordance with Section 1020. Opening protectives in accordance with Exception 3 of Section 707.6 shall not be permitted. Such public hall shall provide access to at least two exits.

Exception: Where the only dwelling units on a story of a building are the upper stories of multistory (duplex) dwelling units;

1. Any public halls shall be permitted to provide access to only one exit; or
2. No such public hall shall be required where smoke and draft controlled doors complying with UL 1784 without artificial bottom seals, in accordance with Sections 716.5 and 716.5.7.3 of this code, are provided. This exception shall not be construed to effect, alter, or change any requirement of this code to provide two means of egress from each apartment on each story.

SECTION BC 1017 EXIT ACCESS TRAVEL DISTANCE

1017.1 General. Travel distance within the exit access portion of the means of egress system shall be in accordance with this section.

1017.2 Limitations. Exit access travel distance shall not exceed the values given in Table 1017.2.

**TABLE 1017.2
EXIT ACCESS TRAVEL DISTANCE^a**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A	See Section 1029.7	
E, F-1, M, R, S-1	150	200 ^b
B	200	300 ^c
F-2, S-2, U	200	250 ^c
H-1	Not Permitted	75 ^d
H-2	Not Permitted	100 ^d
H-3	Not Permitted	150 ^d
H-4	Not Permitted	175 ^d
H-5	Not Permitted	200 ^c
I-1, I-2, I-3, I-4	Not Permitted	200 ^c

For SI: 1 foot = 304.8 mm.

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

- Section 402.8: For the distance limitation in malls.
- Section 404.9: For the distance limitation through an atrium space.
- Section 407.4: For the distance limitation in Group I-2.
- Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
- Section 411.4: For the distance limitation in special amusement buildings.
- Section 412.7: For the distance limitations in aircraft manufacturing facilities.
- Section 407.4.2: For the distance limitation in Group I-2 hospital suites.
- Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.
- Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.
- Section 1006.3.2: For buildings with one exit.

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Section 1029.7: For increased limitation in assembly seating.

Section 3103.4: For temporary structures.

Section 3104.9: For pedestrian walkways.

- b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where sprinkler systems are permitted in accordance with Section 903.3.1.2.
- c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- d. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.1.

1017.2.1 Exterior egress balcony increase. Exit access travel distances specified in Table 1017.2 shall be increased up to an additional 100 feet (30 480 mm) provided the last portion of the exit access leading to the exit occurs on an exterior egress balcony constructed in accordance with Section 1021. The length of such balcony shall be not less than the amount of the increase taken.

1017.3 Measurement. Exit access travel distance shall be measured from the most remote point within a story along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit.

Exceptions:

1. In open parking garages, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.
2. In buildings of Group A-5 with open-air seating served by exit access stairways and ramps, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.
3. Exit access travel distance in assembly occupancies shall be measured in accordance with Section 1029.

1017.3.1 Exit access stairways and ramps. Travel distance on exit access stairways or ramps shall be included in the exit access travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stair and landings. The measurement along ramps shall be made on the walking surface in the center of the ramp and landings.

SECTION BC 1018 AISLES

1018.1 General. Aisles and aisle accessways serving as a portion of the exit access in the means of egress system shall comply with the requirements of this section. Aisles or aisle accessways shall be provided from all occupied portions of the exit access that contain seats, tables, furnishings, displays and similar fixtures or equipment. The minimum width or required capacity of aisles shall be unobstructed.

Exception: Encroachments complying with Section 1005.7.

1018.2 Aisles in assembly spaces. Aisles and aisle accessways serving a room or space used for assembly purposes shall comply with Section 1029.

1018.3 Aisles in Groups B and M. In Group B and M occupancies, the minimum clear aisle width shall be determined by Section 1005 for the occupant load served, but shall be not less than 36 inches (914.4 mm).

Exception: Nonpublic aisles serving less than 50 people and not required to be accessible by Chapter 11 need not exceed 28 inches (711.2 mm) in width.

1018.4 Aisle accessways in Group M. An aisle accessway shall be provided on not less than one side of each element within the merchandise pad. The minimum clear width for an aisle accessway not required to be accessible shall be 30 inches (762 mm). The required clear width of the aisle accessway shall be measured perpendicular to the elements and merchandise within the merchandise pad. The 30-inch (762 mm) minimum clear width shall be maintained to provide a path to an adjacent aisle or aisle accessway. The common path of egress travel shall not exceed 30 feet (9144 mm) from any point in the merchandise pad.

Exception: For areas serving not more than 50 occupants, the common path of egress travel shall not exceed 75 feet (22 860 mm).

SECTION BC 1019 EXIT ACCESS STAIRWAYS AND RAMPS

1019.1 General. Exit access stairways and ramps serving as an exit access component in a means of egress system shall comply with the requirements of this section. The number of stories connected by exit access stairways and ramps shall include basements, but not mezzanines.

1019.2 All occupancies. Exit access stairways and ramps that serve floor levels within a single story are not required to be enclosed.

1019.3 Occupancies other than Groups H, I-2 and I-3. In other than Group H, I-2 and I-3 occupancies, exit access stairways or ramps shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

Exception: In other than Group H, I-2 and I-3 occupancies, exit access stairways or ramps that comply with one of the following conditions need not be enclosed:

1. A maximum of 50 percent of the exit access stairways and ramps that serve only two consecutive stories need not be enclosed, provided each such interconnected story has access to the minimum number of approved independent exits as required by Section 1006, and in no case be less than two means of egress. Such interconnected stories shall not be open to other stories. Unenclosed exit access stairways and ramps shall be remotely located in accordance with Section 1007.
2. In buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, exit access stairways and ramps that serve between only the first and second stories above grade, provided the first and second stories have access to the minimum number of approved independent exits as required by Section 1006, and in no case be less than two means of egress. Such interconnected stories shall not be open to other stories. Unenclosed exit access stairways and ramps shall be remotely located in accordance with Section 1007.
3. In Group R-1, R-2 or R-3 occupancies that are fully sprinklered in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, exit access stairways and ramps connecting four stories or less and contained within an individual residential dwelling unit.
4. Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13 as modified by Appendix Q. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. Exit access stairways and ramps within an atrium complying with the provisions of Section 404.
6. Exit access stairways and ramps in open parking garages that serve only the parking garage.
7. Exit access stairways and ramps serving open-air seating in buildings of Group A-5, where all portions of the means of egress are essentially open to the outside.
8. Exit access stairways and ramps serving the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.

1019.4 Group I-2 and I-3 occupancies. In Group I-2 and I-3 occupancies, floor openings between stories containing exit access stairways or ramps are required to be enclosed with a shaft enclosure constructed in accordance with Section 713.

Exception: In Group I-3 occupancies, exit access stairways or ramps constructed in accordance with Section 408 are not required to be enclosed.

SECTION BC 1020 CORRIDORS

1020.1 Construction. Corridors shall be constructed in accordance with this section. Interior corridor walls required to be fire-resistance rated shall comply with Section 708 for fire partitions. Public corridor walls shall comply with Section 707 for fire barriers.

1020.1.1 Interior corridors. Interior corridors shall be fire-resistance rated in accordance with Table 1020.1.1.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has not less than one door opening directly to the exterior and rooms for assembly purposes have not less than one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A fire-resistance rating is not required for corridors contained within a dwelling unit or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B that is a space requiring only a single means of egress complying with Section 1006.2.
5. Corridors adjacent to the exterior walls of buildings shall be permitted to have unprotected openings on unrated exterior walls where unrated walls are permitted by Table 602 and unprotected openings are permitted by Table 705.8.

**TABLE 1020.1.1
INTERIOR CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	OCCUPANT LOAD SERVED BY INTERIOR CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system ^c
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	1 ^d	0
I-2 ^a , I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1 ^b

a. For requirements for occupancies in Group I-2, see Sections 407.2 and 407.3.

b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.8.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.

d. Interior corridors within dwelling or sleeping units in Group R occupancies pursuant to Section 1020.1.1, Exception 2 shall not require fire-resistance rating.

1020.1.2 Public corridors. Public corridors shall be fire-resistance rated in accordance with Table 1020.1.2.

**TABLE 1020.1.2
PUBLIC CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	REQUIRED FIRE-RESISTANCE RATING (hours)
H-1, H-2, H-3	2
H-4, H-5	1
A, E, F, M, S, U	1
B	1 ^a
R (Noncombustible)	1 ^c

R (Combustible)	2 ^b
I-1, I-2, I-3, I-4	1

- Public corridors need not be fire rated in high-rise buildings in Occupancy Group B equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where such building is provided with smokeproof enclosures in stairways in accordance with Section 403.5.4.
- Public corridors in buildings not exceeding two stories in height, or that are three stories in height and occupied by not more than one family on each story, may be constructed with 1-hour fire-resistance rating.
- Corridors serving accessory rooms or spaces in Group R-2 occupancies pursuant to Section 1004.1.1.2.3 shall be constructed with fire barriers with 1-hour fire-resistance rating, and 2-hour fire-resistance rating where the dead-end distance exceeds 40 feet (12 192 mm) in length.

1020.2 Width and capacity. The required capacity of corridors shall be determined as specified in Section 1005, but the minimum width shall be not less than that specified in Table 1020.2.

Exception: In Group I-2 occupancies, corridors are not required to have a clear width of 96 inches (2438.4 mm) in areas where there will not be stretcher or bed movement for access to care or as part of the defend-in-place strategy.

**TABLE 1020.2
MINIMUM CORRIDOR WIDTH**

OCCUPANCY	MINIMUM WIDTH (inches)
Any facilities not listed below	44
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24
With an occupant load of 50 or less, except as otherwise required by Chapter 11	36
Within a dwelling unit, in Occupancy Groups I-1 and R-1, except as otherwise required by Section 1107	36
Within a dwelling unit, in Occupancy Groups R-2 and R-3, except as otherwise required by Section 1107	30
In Group E serving classrooms	66
In corridors and areas serving stretcher traffic in occupancies where patients receive outpatient medical care that causes the patients to be incapable of self-preservation	72
Group I-2 in areas where required for bed movement	96

For SI: 1 inch = 25.4 mm.

1020.3 Obstruction. The minimum width or required capacity of corridors shall be unobstructed.

Exception: Encroachments complying with Section 1005.7.

1020.4 Dead ends. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.

Exceptions:

- In occupancies in Group I-3 of Condition 2, 3 or 4, the dead end in a corridor shall not exceed 50 feet (15 240 mm).
- In occupancies in Groups B, E, F, I-1, M, R-1, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm).
- Dead-end length not exceeding 2.5 times the least width of the dead-end corridor.

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4. In occupancies in Group R-2, the dead end in a corridor shall not exceed 40 feet (12 192 mm). However, where the corridors are completely enclosed in construction having a 2-hour fire-resistance rating with all doors opening into the corridor being self-closing and having a fire-resistance rating of 1½ hours, the length of dead-end corridor shall not exceed 80 feet (24 384 mm).

1020.5 Air movement in corridors. Use of corridors as part of direct supply, return, or exhaust air system shall be subject to the limitations of the *New York City Mechanical Code*.

1020.5.1 Corridor ceiling. Use of the space between the corridor ceiling and the floor or roof structure above as a return air plenum shall be in accordance with the *New York City Mechanical Code*.

1020.6 Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms. Where the path of egress travel within a fire-resistance-rated corridor to the exit includes travel along unenclosed exit access stairways or ramps, the fire-resistance rating shall be continuous for the length of the stairway or ramp and for the length of the connecting corridor on the adjacent floor leading to the exit.

Exceptions:

1. Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.
2. Enclosed elevator lobbies as permitted by Item 1 of Section 1016.2 shall not be construed as intervening rooms.

SECTION BC 1021 EGRESS BALCONIES

1021.1 General. Balconies used for egress purposes shall conform to the same requirements as corridors for minimum width, required capacity, headroom, dead ends and projections.

1021.2 Wall separation. Exterior egress balconies shall be separated from the interior of the building by walls and opening protectives as required for corridors.

Exception: Separation is not required where the exterior egress balcony is served by not less than two stairways and a dead-end travel condition does not require travel past an unprotected opening to reach a stairway.

1021.3 Openness. The long side of an egress balcony shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

1021.4 Location. Exterior egress balconies shall have a minimum fire separation distance of 10 feet (3048 mm) measured at right angles from the exterior edge of the egress balcony to the following:

1. Adjacent lot lines.
2. Other portions of the building.
3. Other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with Section 705 based on fire separation distance.

For the purposes of this section, other portions of the building shall be treated as separate buildings.

1021.5 Outdoor conditions. Exterior egress balconies shall be designed to minimize accumulation of snow and ice that impedes the means of egress.

SECTION BC 1022 EXITS

1022.1 General. Exits shall comply with Sections 1022 through 1027 and the applicable requirements of Sections 1003 through 1015. An exit shall not be used for any purpose that interferes with its function as a means of egress.

Once a given level of exit protection is achieved, such level of protection shall not be reduced until arrival at the exit discharge. Exits shall be continuous from the point of entry into the exit to the exit discharge.

Exception: Interior exit stairways with doors that are automatic-closing by smoke detection pursuant to the exception set forth in Section 713.7 may be used for travel between floors and this use shall not be deemed to interfere with function as a means of egress.

1022.2 Exterior exit doors. Buildings or structures used for human occupancy shall have not less than one exterior door that meets the requirements of Section 1010.1.1.

1022.2.1 Detailed requirements. Exterior exit doors shall comply with the applicable requirements of Section 1010.1.

1022.2.2 Arrangement. Exterior exit doors shall lead directly to the exit discharge or the public way.

SECTION BC 1023 INTERIOR EXIT STAIRWAYS AND RAMPS

1023.1 General. Interior exit stairways and ramps serving as an exit component in a means of egress system shall comply with the requirements of this section. Interior exit stairways and ramps shall be enclosed and lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1024, except as permitted in Section 1028.1. An interior exit stairway or ramp shall not be used for any purpose other than as a means of egress and a circulation path.

1023.2 Construction. Enclosures for interior exit stairways and ramps shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. Interior exit stairway and ramp enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the interior exit stairways or ramps shall include any basements, but not any mezzanines. Interior exit stairways and ramps shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. In Group R-1 and R-2 occupancies, where interior exit stairways and ramps are required to have a fire-resistance rating of 2 hours, such enclosures shall be constructed of masonry or masonry equivalent. Wall assemblies constituting masonry equivalent shall be constructed in accordance with department rules.

Exceptions:

1. Interior exit stairways and ramps in Group I-3 occupancies in accordance with the provisions of Section 408.3.8.
2. Interior exit stairways within an atrium enclosed in accordance with Section 404.6.

1023.3 Termination. Interior exit stairways and ramps shall terminate at an exit discharge or a public way.

Exception: A combination of interior exit stairways, interior exit ramps and exit passageways, constructed in accordance with Sections 1023.2, 1023.3.1 and 1024, respectively, and forming a continuous protected enclosure, shall be permitted to extend an interior exit stairway or ramp to the exit discharge or a public way.

1023.3.1 Extension. Where interior exit stairways and ramps are extended to an exit discharge or a public way by an exit passageway, the interior exit stairway and ramp shall be separated from the exit passageway by a fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 711, or both. The fire-resistance rating shall be not less than that required for the interior exit stairway and ramp. A fire door assembly complying with Section 716.5 shall be installed in the fire barrier to provide a means of egress from the interior exit stairway and ramp to the exit passageway. Openings in the fire barrier other than the fire door assembly are prohibited. Penetrations of the fire barrier are prohibited.

Exceptions:

1. Penetrations of the fire barrier in accordance with Section 1023.5 shall be permitted.
2. Separation between an interior exit stairway or ramp and the exit passageway extension shall not be required where there are no openings into the exit passageway extension.

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1023.4 Openings. Interior exit stairway and ramp opening protectives shall be in accordance with the requirements of Section 716.

Openings in interior exit stairways and ramps other than unprotected exterior openings shall be limited to those necessary for exit access to the enclosure from normally occupied spaces and for egress from the enclosure.

Elevators shall not open into interior exit stairways and ramps.

1023.5 Penetrations. Penetrations into or through interior exit stairways and ramps are prohibited except for equipment and ductwork necessary for independent ventilation or pressurization, hydronic piping and related heating equipment limited to serving the interior exit stairway or ramp in which such piping and equipment is located, sprinkler piping, standpipes, electrical raceway for Fire Department communication systems and electrical raceway serving the interior exit stairway and ramp and terminating at a steel box not exceeding 16 square inches (0.010 m²). Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent interior exit stairways and ramps.

Exception: Membrane penetrations shall be permitted on the outside of the interior exit stairway and ramp. Such penetrations shall be protected in accordance with Section 714.3.2.

††† **1023.6 Ventilation.** Equipment and ductwork for interior exit stairway and ramp ventilation as permitted by Section 1023.5 shall comply with one of the following items:

1. Such equipment and ductwork shall be located exterior to the building and shall be directly connected to the interior exit stairway and ramp by ductwork enclosed in construction as required for shafts.
2. Where such equipment and ductwork is located within the interior exit stairway and ramp, the intake air shall be taken directly from the outdoors and the exhaust air shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required for shafts.
3. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts.

In each case, openings into the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by opening protectives in accordance with Section 716 for shaft enclosures.

The interior exit stairway and ramp ventilation systems shall be independent of other building ventilation systems.

1023.7 Interior exit stairway and ramp exterior walls. Exterior walls of the interior exit stairway or ramp shall comply with the requirements of Section 705 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the stairway or ramps and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than ³/₄ hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or ramp, or to the roof line, whichever is lower.

1023.8 Discharge identification. An interior exit stairway and ramp shall not continue below its level of exit discharge unless an approved barrier is provided at the level of exit discharge to prevent persons from unintentionally continuing into levels below. Directional exit signs shall be provided as specified in Section 1013. An approved barrier shall consist of partitions, doors, or gates separating the portion of the interior exit stairway above grade from the portion below grade. Where doors or gates are provided as approved barriers, such doors or gates shall be self-closing, opening in the direction of exit travel from the floors below grade, and provided with landings in accordance with Sections 1010.1.5 and 1010.1.6.

Exceptions:

1. Such barrier separating the above-grade portion of the interior exit stairways and ramps from the portion below grade shall not be required in Group E and R-3 occupancies.
2. Such barrier separating the above-grade portion of the interior exit stairways and ramps from the portion below grade shall not be required where the stairway or ramp design is intended to continue the path of egress through a below grade level.

1023.9 Stairway identification and floor level signs. Signs identifying stairways shall comply with Section 1023.9.1. Signs identifying floor levels shall comply with Sections 1023.9.2 through 1023.9.5.

1023.9.1 Stairway identification signs. A stairway identification sign indicating each stair by alphabetic letter shall be posted on both sides of each stair door. The alphabetic letters designating the identification of the interior exit stairway and ramp shall be not less than 3 inches (76.2 mm) in height. Such sign shall comply with Items 2, 5 and 6 of Section 1023.9.4.

1023.9.2 Floor identification signs. A floor identification sign shall be provided at each floor landing in an interior exit stairway and ramp connecting more than three stories. Such sign shall designate:

1. The floor level;
2. The terminus of the top and bottom of the interior exit stairway and ramp;
3. The identification of the interior exit stairway and ramp;
4. The story of the exit discharge; and
5. The availability of roof access from the interior exit stairway and ramp for the Fire Department.

1023.9.3 Accessible floor level identification signs. Floor level identification signs in visual characters, raised characters and braille complying with ICC A117.1 shall be located at each floor level landing adjacent to the door on the stair side.

1023.9.4 Signage requirements. Floor identification signs required by Section 1023.9.2 shall comply with all of the following requirements:

1. The signs shall be a minimum size of 18 inches (457.2 mm) by 12 inches (304.8 mm).
2. The top of the signs shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions.
3. The number designating the floor level shall be not less than 5 inches (127 mm) in height and located in the center of the sign.
4. Other lettering and numbers shall be not less than 1 inch (25.4 mm) in height.
5. Characters and their background shall have a nonglare finish. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.
6. Where signs required by Section 1023.9 are installed in the interior exit stairways and ramps of buildings subject to Section 1025, the signs shall be made of the same luminous materials as required by Section 1025.4.

1023.9.5 Directions to openable doors. Where doors serving interior exit stairways are locked on the stair side, signage shall be posted in compliance with Sections 1031.4.1, 1031.4.2 and 1031.4.3.

1023.10 Elevator lobby identification signs. At landings in interior exit stairways where two or more doors lead to the floor level, any door with direct access to an enclosed elevator lobby shall be identified by signage located on the door or directly adjacent to the door stating "Elevator Lobby." Signage shall be in accordance with Section 1023.9.4, Items 4, 5 and 6.

1023.11 Smokeproof enclosures and pressurization alternative. In buildings required to comply with Section 403 or 405, each of the interior exit stairways and ramps serving a story with a floor surface located more than 75 feet (22 860 mm) above the lowest level of Fire Department vehicle access or more than 30 feet (9144 mm) below the finished floor of a level of exit discharge serving such stories shall be protected by a smokeproof enclosure or pressurization alternative in accordance with Section 909.20.

1023.11.1 Termination and extension. A smokeproof enclosure or pressurization alternative shall terminate at an exit discharge or a public way. The smokeproof enclosure or pressurization alternative shall be permitted to be extended by an exit passageway in accordance with Section 1023.3. The exit passageway shall be without openings other than the fire door assembly required by Section 1023.3.1 and those necessary for egress from the exit passageway. The exit passageway shall be separated from the remainder of the building by 2-hour fire barriers

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constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

Exceptions:

1. Openings in the exit passageway serving a smokeproof enclosure are permitted where the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure, and openings are protected as required for access from other floors.
2. Openings in the exit passageway serving a pressurization alternative are permitted where the exit passageway is protected and pressurized in the same manner as the pressurization alternative.
3. The fire barrier separating the smokeproof enclosure or pressurization alternative from the exit passageway is not required, provided the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure or pressurization alternative.
4. A smokeproof enclosure or pressurization alternative shall be permitted to egress through areas on the level of exit discharge or vestibules as permitted by Section 1028.

1023.11.2 Enclosure access. Access to the stairway or ramp within a smokeproof enclosure shall be by way of a vestibule or an open exterior balcony.

Exception: Access is not required by way of a vestibule or exterior balcony for stairways and ramps using the pressurization alternative complying with Section 909.20.5.

SECTION BC 1024 EXIT PASSAGEWAYS

1024.1 Exit passageways. Exit passageways serving as an exit component in a means of egress system shall comply with the requirements of this section. An exit passageway shall not be used for any purpose other than as a means of egress and a circulation path.

1024.2 Width. The required capacity of exit passageways shall be determined as specified in Section 1005 but the minimum width shall be not less than 44 inches (1117.6 mm), except that exit passageways serving an occupant load of less than 50 shall be not less than 36 inches (914.4 mm) in width. The minimum width or required capacity of exit passageways shall be unobstructed.

Exception: Encroachments complying with Section 1005.7.

1024.3 Construction. Exit passageway enclosures shall have walls, floors and ceilings of not less than a 1-hour fire-resistance rating, and not less than that required for any connecting interior exit stairway or ramp. Exit passageways shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

1024.4 Termination. Exit passageways on the level of exit discharge shall terminate at an exit discharge. Exit passageways on other levels shall terminate at an exit component.

1024.5 Openings. Exit passageway opening protectives shall be in accordance with the requirements of Section 716.

Except as permitted in Section 402.8.7, openings in exit passageways other than unprotected exterior openings shall be limited to those necessary for exit access to the exit passageway from normally occupied spaces and for egress from the exit passageway.

Where an interior exit stairway or ramp is extended to an exit discharge or a public way by an exit passageway, the exit passageway shall comply with Section 1023.3.1.

Elevators shall not open into an exit passageway.

1024.6 Penetrations. Penetrations into or through an exit passageway are prohibited except for equipment and ductwork necessary for independent pressurization, hydronic piping and related heating equipment limited to serving the exit passageway in which such piping and equipment is located, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at a steel box not

exceeding 16 square inches (0.010 m²). Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communicating openings, whether protected or not, between adjacent exit passageways.

Exception: Membrane penetrations shall be permitted on the outside of the exit passageway. Such penetrations shall be protected in accordance with Section 714.3.2.

1024.7 Ventilation. Equipment and ductwork for exit passageway ventilation as permitted by Section 1024.6 shall comply with one of the following:

1. The equipment and ductwork shall be located exterior to the building and shall be directly connected to the exit passageway by ductwork enclosed in construction as required for shafts.
2. Where the equipment and ductwork is located within the exit passageway, the intake air shall be taken directly from the outdoors and the exhaust air shall be discharged directly to the outdoors, or the air shall be conveyed through ducts enclosed in construction as required for shafts.
3. Where located within the building, the equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts.

In each case, openings into the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by opening protectives in accordance with Section 716 for shaft enclosures.

Exit passageway ventilation systems shall be independent of other building ventilation systems.

SECTION BC 1025 LUMINOUS EGRESS PATH MARKINGS

1025.1 General. Approved luminous egress path markings delineating the exit path shall be provided in all high-rise buildings subject to Section 403.5 having occupied floors located more than 75 feet (22 860 mm) above the lowest level of Fire Department vehicle access in accordance with Sections 1025.1 through 1025.9.

Exceptions:

1. Luminous egress path markings shall not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1028.1, Exception 1.
2. In open parking garages, luminous egress path markings shall not be required in open exit stairways serving only the open parking garage, and areas of open parking garages that serve such part of the exit path.
3. Luminous egress path markings shall not be required on egress paths serving Group R-2.

1025.2 Required markings. Egress path markings shall be provided in interior exit stairways, interior exit ramps and exit passageways, in accordance with Sections 1025.2.1 through 1025.2.9. Entrances to interior exit stairways, interior exit ramps and exit passageways shall be provided with exit signs in compliance with Section 1025.2.6.1.

1025.2.1 Steps. A solid and continuous stripe shall be applied to the horizontal leading edge of each step and shall extend for the full length of the step. Outlining stripes shall have a minimum horizontal width of 1 inch (25.4 mm) and a maximum width of 2 inches (50.8 mm). The leading edge of the stripe shall be placed not more than 1/2 inch (12.7 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by more than 1/2 inch (12.7 mm) down the vertical face of the step. Outlining stripes on steps shall comply with Figure S101.1(2) in Appendix S.

Exception: The minimum width of 1 inch (25.4 mm) shall not apply to outlining stripes listed in accordance with UL 1994.

1025.2.2 Landings. The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps. Stripes on landings shall comply with Figure S101.1(3) in Appendix S.

1025.2.3 Handrails. Handrails and handrail extensions shall be marked with a solid and continuous stripe having a minimum width of 1 inch (25.4 mm). The stripe shall be placed on the top surface of the handrail for the entire length of the handrail, including extensions and newel post caps. Where handrails or handrail extensions bend or

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turn corners, the stripe shall not have a gap of more than 4 inches (101.6 mm). Stripes on handrails shall comply with Figure S101.1(4) in Appendix S.

Exception: The minimum width of 1 inch (25.4 mm) shall not apply to outlining stripes listed in accordance with UL 1994.

1025.2.4 Perimeter demarcation lines. Stair landings and other floor areas within interior exit stairways, interior exit ramps and exit passageways, with the exception of the sides of steps, shall be provided with solid and continuous demarcation lines on the floor or on the walls or a combination of both. The stripes shall be 1 to 2 inches (25.4 mm to 50.8 mm) wide with interruptions not exceeding 4 inches (101.6 mm).

Exception: The minimum width of 1 inch (25.4 mm) shall not apply to outlining stripes listed in accordance with UL 1994.

1025.2.4.1 Floor-mounted demarcation lines. Perimeter demarcation lines shall be placed within 4 inches (101.6 mm) of the wall and shall extend to within 2 inches (50.8 mm) of the markings on the leading edge of landings. The demarcation lines shall continue across the floor in front of all doors. Perimeter demarcation lines shall comply with Figure S101.1(5) in Appendix S.

Exceptions:

1. Demarcation lines shall not extend in front of exit discharge doors that lead out of an exit and through which occupants must travel to complete the exit path.
2. Demarcation lines shall be continuous but need not extend into an area such as a dead end or an obstruction that is selected not to be outlined because it is not part of the egress path.

1025.2.4.2 Wall-mounted demarcation lines. Perimeter demarcation lines shall be placed on the wall with the bottom edge of the stripe not more than 4 inches (101.6 mm) above the finished floor. At the top or bottom of the stairs, demarcation lines shall drop vertically to the floor within 2 inches (50.8 mm) of the step or landing edge. Demarcation lines on walls shall transition vertically to the floor and then extend across the floor where a line on the floor is the only practical method of outlining the path. Where the wall line is broken by a door, demarcation lines on walls shall continue across the face of the door or transition to the floor and extend across the floor in front of such door. Wall-mounted demarcation lines shall comply with Figure S101.1(8) in Appendix S.

Exceptions:

1. Demarcation lines shall not extend in front of exit discharge doors that lead out of an exit and through which occupants must travel to complete the exit path.
2. Perimeter demarcation lines are not required on the sides of steps.
3. Perimeter demarcation lines are not required where an area such as a dead end or an obstruction is selected not to be outlined because it is not part of the egress path, the demarcation lines shall not be required in such area provided that a demarcation line is continuous across the floor.

1025.2.4.3 Transition. Where a wall-mounted demarcation line transitions to a floor-mounted demarcation line, or vice versa, the wall-mounted demarcation line shall drop vertically to the floor to meet a complementary extension of the floor-mounted demarcation line, thus forming a continuous marking. Transitioning demarcation lines shall comply with Figure S101.1(7) in Appendix S.

1025.2.5 Obstacles. Obstacles at or below 6 feet 6 inches (1981.2 mm) in height and projecting more than 4 inches (101.6 mm) into the egress path shall be outlined with markings not less than 1 inch (25.4 mm) in width comprised of a pattern of alternating equal bands, of luminous material and black, with the alternating bands not more than 2 inches (50.8 mm) thick and angled at 45 degrees (0.79 rad). Obstacles shall include, but are not limited to, standpipes, hose cabinets, wall projections and restricted height areas. However, such markings shall not conceal any required information or indicators including but not limited to instructions to occupants for the use of standpipes. Markings on obstacles shall comply with Figure S101.1(6) in Appendix S.

1025.2.6 Doors within the exit path. Doors through which occupants must pass in order to complete the exit path, and doors serving horizontal exits, shall be provided with markings complying with Sections 1025.2.6.1 through 1025.2.6.3 of this chapter and Figures S101.1(11) and S101.1(12) in Appendix S. Exit discharge doors shall further comply with Section 1025.2.6.1.2.

1025.2.6.1 Emergency exit symbol. The doors shall be identified by a low-location luminous emergency exit symbol complying with Section 1025.6.1. The exit symbol shall be not less than 4 inches (101.6 mm) in height and shall be mounted on the door itself in accordance with Section 1025.2.6.1.1. Such signs shall be no higher than 18 inches (457.2 mm) above the finished floor.

1025.2.6.1.1 Mounting location. The vertical centerline of the sign shall be centered with the door, or shall be in that half of the door, either the right or left, that contains the latch. In case of double-doors, both doors shall be marked and the signs shall be centered with the doors. Arrows may be omitted on door-mounted signs. Door-mounted signs shall comply with Figure S101.1(1) in Appendix S.

1025.2.6.1.2 Exit discharge doors. At doors serving as exit discharge, a sign in compliance with Section 1025.2.6.1.1 shall contain supplemental directional text such as “FINAL EXIT,” “EXIT THROUGH LOBBY,” or “EXIT TO STREET” in sans serif letters one-half as high as the word EXIT. Exit discharge door sign shall comply with Figure S101.1(13) in Appendix S.

1025.2.6.2 Door hardware markings. Door hardware shall be marked with not less than 16 square inches (0.01 m²) of luminous material. This marking shall be located behind, immediately adjacent to, or on the door handle or escutcheon. Where a panic bar is installed, such material shall not be less than 1 inch (25.4 mm) wide for the entire length of the actuating bar or touchpad. Additional hardware markings may include ANSI Z 535.1 safety green graphics such as arrows indicating door handle turning directions, or emergency egress symbols as per NFPA 170, the word “EXIT,” the word “PUSH,” and similar egress-related symbols, provided the minimum 16 square inches (0.01 m²) of luminous materials is maintained.

1025.2.6.3 Door frame markings. The top and sides of the door frame shall be marked with a solid and continuous 1- to 2-inch (25.4 mm to 50.8 mm) wide stripe. Where the door molding does not provide sufficient flat surface on which to locate the stripe, the stripe shall be permitted to be located on the wall surrounding the frame.

1025.2.7 Directional signage upon entering an interior exit stairway or ramp. Luminous directional signs designed in compliance with Section 1025.6.1 shall be placed in the interior exit stairway or ramp at every entrance thereto such that they are readily visible when the doors are in the open and closed positions. Such directional sign shall include an arrow indicating the direction of travel. The word “EXIT” shall not be required. The signs shall be located such that their top edge is within 18 inches (457.2 mm) above the finished floor. Directional signs shall comply with Figure S101.1(9) in Appendix S.

1025.2.8 Directional signage at transfer levels and where egress direction is not clear. Luminous directional signs designed in compliance with Section 1025.6.1 and installed at heights indicated in Section 1025.2.7 shall be placed on the wall at transfer levels and wherever egress direction is not clear; including at turns along horizontal extensions, at transitions from vertical to horizontal direction and at a “T” intersection. These directional signs shall include arrows indicating the direction of travel. The word “EXIT” shall not be required. Directional signs at transfer levels shall comply with Figure S101.1(9) in Appendix S.

1025.2.9 “No Exit” sign. Luminous signs shall be placed on doors along the egress path that lead to dead ends (mechanical rooms, storage closets, etc.). Such signs shall contain sans serif lettering at least 1 inch (25.4 mm) high reading “NO EXIT,” with the “NO” centered above the “EXIT.” The “NO” may be a larger size than the “EXIT” for clarity. The nonluminous portion of such signs shall not be green. No-exit signs shall comply with Figure S101.1(10) in Appendix S.

1025.3 Uniformity. Placement and dimensions of markings shall be consistent and uniform throughout the same enclosure.

1025.3.1 Solid and continuous. For the purposes of this section, solid and continuous means without gaps or interruption, except as required for the control of expansion and contraction. A series of dashes, chevrons, dots, or other similar patterns is not solid and continuous. Luminous materials shall be considered solid and continuous if they occasionally contain the following safety green (ANSI Z 535.1) symbols or text:

1. The word “EXIT”;
2. Egress symbol as per NFPA 170;
3. Direction arrows as per NFPA 170; or

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4. Other text or symbols as approved by the commissioner.

1025.4 Self-luminous and photoluminescent. Luminous egress path markings shall be permitted to be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminance. Such materials shall include, but not be limited to, self-luminous materials and photoluminescent materials. Materials shall comply with either of the following standards:

1. UL 1994.
2. ASTM E 2072, except that the charging source shall be 1 footcandle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 30 millicandelas per square meter at 10 minutes and 5 millicandelas per square meter after 90 minutes.

1025.4.1 Labeling. All approved materials shall be labeled and identified with the manufacturer's name, model number and the name of the approved agency in a minimum of 6 point type with at least one such identification on each piece of material installed. However, labeling is not required for pieces of material less than 1 foot (304.8 mm) in length that are placed in immediate proximity of an identical model that is labeled. Materials may include supplemental identifying information such as the trade name or "NYC."

1024.5 Reserved.

1025.6 General standards. Luminous materials shall comply with the design standards of Sections 1025.6.1 and 1025.6.2.

1025.6.1 Design of door and directional signs. Unless otherwise specified, all photoluminescent door signs and directional signs:

1. May be either positive or negative image;
2. Shall be made with the non-photoluminescent portions of the signs in safety green as per ANSI Z535.1; and
3. Shall include three components:
 - 3.1. The word "EXIT" printed in sans serif letters at least 4 inches high (101.6 mm) with strokes no less than $\frac{1}{2}$ inch (12.7 mm);
 - 3.2. An emergency exit symbol at least 4 inches high (101.6 mm), complying with NFPA 170; and
 - 3.3. An arrow at least $2\frac{3}{4}$ inches (69.9 mm) high, complying with NFPA 170.

Design of door and directional sign shall comply with Figures S101.1(9), S101.1(13), S101.1(14) and S101.1(15) in Appendix S.

1025.6.1.1 Additional text for sign subject to this section. Additional descriptive text is permitted, provided such words are in sans serif letters and, where the word "EXIT" or the emergency symbol is required on such sign, such a descriptive text is no more than one-half as high as the word "EXIT" or the emergency exit symbol.

1025.6.2 Figures. The figures in Appendix S are intended only for illustration, and where there is a conflict between the figures and this section, this section shall govern.

1025.7 Voluntary installation. Where luminous egress path markings are not required but are voluntarily installed in the exit path, such markings shall comply with Section 1025.

1025.8 Special inspection. Luminous exit path markings shall be subject to special inspection in accordance with Sections 1025.8.1 through 1025.8.3.

1025.8.1 Inspection. A registered design professional shall verify by visual inspection that all components have been installed in accordance with Section 1025, both with the normal lighting turned on and with the normal and emergency lighting turned off.

1025.8.2 Product identification. A registered design professional shall review the manufacturer product literature and information from the testing agency and verify that the products installed are labeled as meeting the standards in Section 1025.4. The registered design professional shall verify which particular products were installed in which parts of the building.

1025.8.3 Paints. Where in situ painting was utilized, a registered design professional shall field-verify that the specified paint was utilized in accordance with the manufacturer recommended methods of application.

1025.9 Maintenance program. Owners shall keep the required luminous egress path markings in good repair. At a minimum, owners shall, every 12 months, perform a visual inspection of the markings with the normal lighting turned on. Markings that are missing, damaged, loose, or that show signs of wear or missing labels shall be noted and promptly repaired. The log of such inspections, including the results and any corrective measures taken, shall be kept and maintained on the premises for inspection by the department and the Fire Department. The log shall contain the date of inspection and the printed name and signature of the person performing the inspection.

SECTION BC 1026 HORIZONTAL EXITS

1026.1 Horizontal exits. Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this section. A horizontal exit shall not serve as the only exit from a portion of a building, and where two or more exits are required, not more than one-half of the total number of exits or total exit minimum width or required capacity shall be horizontal exits.

Exceptions:

1. Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.
2. Horizontal exits are permitted to comprise 100 percent of the exits required for occupancies in Group I-3. Not less than 6 square feet (0.6 m²) of accessible space per occupant shall be provided on each side of the horizontal exit for the total number of people in adjoining compartments.
3. Horizontal exits are permitted to serve as the only exits from a portion of a building serving as an intermediate refuge area in accordance with Section 1026.4.2, Exception.

1026.2 Separation. The separation between buildings or refuge areas connected by a horizontal exit shall be provided by a fire wall complying with Section 706; or by a fire barrier complying with Section 707 or a horizontal assembly complying with Section 711, or both. The minimum fire-resistance rating of the separation shall be 2 hours. Opening protectives in horizontal exits shall also comply with Section 716. Duct and air transfer openings in a fire wall or fire barrier that serves as a horizontal exit shall also comply with Section 717. The horizontal exit separation shall extend vertically through all levels of the building unless floor assemblies have a fire-resistance rating of not less than 2 hours with no unprotected openings.

Exception: A fire-resistance rating is not required at horizontal exits between a building area and an above-grade pedestrian walkway constructed in accordance with Section 3104, provided that the distance between connected buildings is more than 20 feet (6096 mm).

Horizontal exits constructed as fire barriers shall be continuous from exterior wall to exterior wall so as to divide completely the floor served by the horizontal exit.

1026.3 Opening protectives. Fire doors in horizontal exits shall be self-closing or automatic-closing when activated by a smoke detector in accordance with Section 716.5.9.3. Doors, where located in a cross-corridor condition, shall be automatic-closing by activation of a smoke detector installed in accordance with Section 716.5.9.3.

1026.4 Refuge area. The refuge area of a horizontal exit shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the adjoining compartment. The anticipated occupant load from the adjoining compartment shall be based on the capacity of the horizontal exit doors entering the refuge area.

1026.4.1 Capacity. The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m²) for each occupant to be accommodated therein.

Exceptions: The net floor area allowable per occupant shall be as follows for the indicated occupancies:

1. Six square feet (0.6 m²) per occupant for occupancies in Group I-3.

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2. Fifteen square feet (1.4 m²) per occupant for ambulatory occupancies in Group I-2.
3. Thirty square feet (2.8 m²) per occupant for nonambulatory occupancies in Group I-2.

1026.4.2 Number of exits. The refuge area into which a horizontal exit leads shall be provided with exits adequate to meet the occupant requirements of this chapter, but not including the added occupant load imposed by persons entering the refuge area through horizontal exits from the adjoining compartment. Not less than one refuge area exit shall lead directly to the exterior or to an interior exit stairway or ramp. In addition to such refuge area exit, in buildings more than 420 feet (128 m) in height that are subject to Section 403.5.2, at least one other exit from each refuge area shall lead directly to the additional exit stairway required by Section 403.5.2, or shall provide access to occupant self-evacuation elevators where such elevators are permitted by Exception 1 or 2 of Section 403.5.2 in lieu of an additional exit stairway.

Exception: A single intermediate refuge area between the adjoining compartment from which egress originates and the final refuge area shall not be required to have a stairway or door leading directly outside, provided the final refuge area into which a horizontal exit leads has stairways or doors leading directly outside and are so arranged that egress shall not require the occupants to return through the intermediate refuge area and the adjoining compartment from which egress originates.

SECTION BC 1027 EXTERIOR EXIT STAIRWAYS AND RAMPS

1027.1 Exterior exit stairways and ramps. Exterior exit stairways and ramps serving as an element of a required means of egress shall comply with this section.

1027.2 Use in a means of egress. Exterior exit stairways shall not be used as an element of a required means of egress for Group I-2 occupancies. For all occupancies other than Group I-2, exterior exit stairways and ramps shall be permitted as an element of a required means of egress for buildings not exceeding six stories above grade plane or that are not high-rise buildings.

1027.3 Open side. Exterior exit stairways and ramps serving as an element of a required means of egress shall be open on not less than one side, except for required structural columns, beams, handrails and guards. An open side shall have not less than 35 square feet (3.3 m²) of aggregate open area adjacent to each floor level and the level of each intermediate landing. The required open area shall be located not less than 42 inches (1066.8 mm) above the adjacent floor or landing level.

1027.4 Adjoining open areas. The open areas adjoining exterior exit stairways or ramps shall be either yards, courts or public ways; the remaining sides are permitted to be enclosed by the exterior walls of the building.

1027.5 Location. Exterior exit stairways and ramps shall have a minimum fire separation distance of 10 feet (3048 mm) measured at right angles from the exterior edge of the stairway or ramps, including landings, to:

1. Adjacent lot lines.
2. Other portions of the building.
3. Other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with Section 705 based on fire separation distance.

For the purposes of this section, other portions of the building shall be treated as separate buildings.

Exception: Noncombustible stoops and ramps not exceeding one story above grade plane located at the street wall and terminating at the street are permitted to be located within 10 feet (3048 mm) of adjacent lot lines or buildings on the same lot when serving:

1. Group R-2 occupancies in buildings of noncombustible construction not exceeding four stories in height and a total of four dwelling units.
2. Group R-3 occupancies.

1027.6 Exterior exit stairway and ramp protection. Exterior exit stairways and ramps shall be separated from the interior of the building as required in Section 1023.2. Openings shall be limited to those necessary for egress from normally occupied spaces. Where a vertical plane projecting from the edge of an exterior exit stairway or ramp and

landings is exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the exterior wall shall be rated in accordance with Section 1023.7.

Exceptions:

1. In all occupancies other than Group R-1 or R-2, separation from the interior of the building is not required in buildings that are not more than two stories above grade plane where a level of exit discharge serving such occupancies is the first story above grade plane.
2. Separation from the interior of the building is not required where the exterior exit stairway or ramp is served by an exterior exit ramp or balcony that connects two remote exterior exit stairways or other approved exits, with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be not less than 50 percent of the height of the enclosing wall, with the top of the openings not less than 7 feet (2133.6 mm) above the top of the balcony.
3. Separation from the open-ended corridor of the building is not required for exterior exit stairways or ramps, provided that Items 3.1 through 3.5 are met.
 - 3.1. The building, including open-ended corridors, and stairways and ramps, shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
 - 3.2. The open-ended corridors comply with Section 1020.
 - 3.3. The open-ended corridors are connected on each end to an exterior exit stairway or ramp complying with Section 1027.
 - 3.4. The exterior walls and openings adjacent to the exterior exit stairway or ramp comply with Section 1023.7.
 - 3.5. At any location in an open-ended corridor where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m²) or an exterior stairway or ramp shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

1027.7 Fire towers. Fire towers may be used as exits in lieu of interior stairs provided they comply with all of the requirements for stairways as per Section 1011, except as modified below.

1027.7.1 Enclosure. The enclosing walls of fire towers shall be of noncombustible materials or assemblies having a fire-resistance rating of at least 4 hours. Such walls shall be without openings, except for doors serving as means of egress.

1027.7.2 Access. At each story served by a fire tower, access to the stairways of such fire tower shall be provided through outside balconies or fireproof vestibules. Such balconies or vestibules shall be at least 44 inches (1117.6 mm) in width and shall have unpierced floors of noncombustible materials and shall be provided with substantial guard railings at least 4 feet (1220 mm) high, without any openings greater than 5 inches (127 mm) in width.

1027.7.3 Balconies and vestibules. Such balconies or vestibules of fire towers shall be level with the floors of the structure and the platforms of the stairs connected by such balconies. Such balconies or vestibules shall be separated from the structure and the stairs by self-closing swinging doors with a 1½-hour fire protection rating, capable of being opened from both sides without the use of a key or other unlocking device.

Balconies or vestibules of fire towers shall open on a street or yard, or on a court open vertically to the sky for its full height, having a minimum net area of 105 square feet (9.7 m²) and a minimum dimension of 7 feet (2133.6 mm). The opening from the vestibule to the street, yard or court shall have a minimum area of 18 square feet (1.7 m²) and a minimum dimension of 30 inches (762 mm). It shall be unlawful to leave openings in the court walls surrounding an interior fire tower, other than the openings from the vestibules, within 15 feet (4572 mm) of the balcony, except that self-closing windows with a ¾-hour fire protection rating may be used if such windows are at least 10 feet (3048 mm) from the balcony, provided that the area of the court is at least 12 feet by 24 feet (3657.6 mm by 7315.2 mm).

1027.7.4 Termination. Fire towers shall terminate at grade level and shall exit directly to the street independently of corridors serving other stairways, except when the fire tower terminates in the ground floor corridor outside of the inner vestibule and within 10 feet (3048 mm) of the building line.

**SECTION BC 1028
EXIT DISCHARGE**

1028.1 General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide a direct path of egress travel to grade. The exit discharge shall not reenter a building. The combined use of Exceptions 1 and 2 below shall not exceed 50 percent of the number and minimum width or required capacity of the required exits.

Exceptions:

1. Not more than 50 percent of the number and minimum width or required capacity of interior exit stairways and ramps is permitted to egress through protected areas on the level of discharge provided all of the following conditions are met:
 - 1.1. Such protected area shall be provided with a free and unobstructed path of travel to an exterior exit door and such exit is readily visible and identifiable within 40 feet from the point of termination of the enclosure.
 - 1.2. The protected area of the level of exit discharge is separated from areas below by construction conforming to the fire-resistance rating for the enclosure.
 - 1.3. The protected area shall be provided with an approved automatic sprinkler system. Portions of the level of exit discharge with access to the egress path shall be either equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of interior exit stairways or ramps.
 - 1.4. Where a required interior exit stairway or ramp and an exit access stairway or ramp serve the same floor level and terminate at the same level of exit discharge, the termination of the exit access stairway or ramp and the exit discharge door of the interior exit stairway or ramp shall be separated by a distance of not less than 30 feet (9144 mm) or not less than one-fourth the length of the maximum overall diagonal dimension of the building, whichever is less. The distance shall be measured in a straight line between the exit discharge door from the interior exit stairway or ramp and the last tread of the exit access stairway or termination of slope of the exit access ramp.
 - 1.5. The capacity of the protected area shall not be less than required by Section 1028.2 in addition to the occupant load of all exits serving communication spaces.
2. Not more than 50 percent of the number and minimum width or required capacity of the interior exit stairways and ramps is permitted to egress through a vestibule provided all of the following conditions are met:
 - 2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire-resistance rating of the interior exit stairway or ramp enclosure.
 - 2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
 - 2.3. The area is separated from the remainder of the level of exit discharge by a fire partition constructed in accordance with Section 708.

Exception: The maximum transmitted temperature rise is not required.
 - 2.4 The area is used only for means of egress and exits directly to the outside.
3. In buildings in occupancy Group R-2, up to 100 percent of the number and minimum width and required capacity of the interior exit stairways and ramps are permitted to egress through a protected area on the level of discharge, if all of the following conditions are met:
 - 3.1. Egress is provided in two different directions from the discharge points of all interior exit stairways and ramps to the exterior of the building that are remote from each other.
 - 3.2. The exit discharges are arranged and constructed so as to minimize the possibility that all exit discharges would be compromised by smoke, fire or other emergency condition.
 - 3.3. Such protected areas shall comply with all requirements of Exception 1 above.

4. Horizontal exits complying with Section 1026 shall not be required to discharge directly to the exterior of the building.

††† **1028.1.1 Fire Department access.** Where Exception 1 or 2 to Section 1028.1 is not applied, not less than one exit that discharges directly to the exterior shall be accessible to the Fire Department:

1. Through an exit access door directly from the building entrance. Such exit access door shall only be used by the Fire Department and shall not be used as an exit. Signage indicating “No Exit. FDNY Access Only” shall be posted on both sides of the exit access door; or
2. Within a maximum of 100 feet (30 480 mm) from the building entrance. Such distance shall be measured along a natural and unobstructed path between the nearest points of the exit doors.

1028.2 Exit discharge width or capacity. The minimum width or required capacity of the exit discharge shall be not less than the minimum width or required capacity of the exits being served.

1028.3 Exit discharge components. Exit discharge components shall be sufficiently open to the exterior so as to minimize the accumulation of smoke and toxic gases.

1028.4 Egress courts. Egress courts serving as a portion of the exit discharge in the means of egress system shall comply with the requirements of Sections 1028.4.1 and 1028.4.2.

1028.4.1 Width or capacity. The required capacity of egress courts shall be determined as specified in Section 1005, but the minimum width shall be not less than 44 inches (1117.6 mm), except as specified herein. Egress courts serving Group R-3 and U occupancies shall be not less than 36 inches (914.4 mm) in width. The required capacity and width of egress courts shall be unobstructed to a height of 7 feet 6 inches (2286 mm).

Exception: Encroachments complying with Section 1005.7.

Where an egress court exceeds the minimum required width and the width of such egress court is then reduced along the path of exit travel, the reduction in width shall be gradual. The transition in width shall be affected by a guard not less than 36 inches (914.4 mm) in height and shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the egress court along the path of egress travel. The width of the egress court shall not be less than the required capacity.

1028.4.2 Construction and openings. Where an egress court serving a building or portion thereof is less than 10 feet (3048 mm) in width, the egress court walls shall have not less than 1-hour fire-resistance-rated construction for a distance of 10 feet (3048 mm) above the floor of the egress court. Openings within such walls shall be protected by opening protectives having a fire protection rating of not less than $\frac{3}{4}$ hour.

Exception: Protection of exterior walls shall not be required where:

1. Egress courts serving an occupant load of less than 10.
2. Egress courts serving Group R-3.

1028.5 Access to a public way. The exit discharge shall provide a direct and unobstructed access to a public way.

Exception: Where access to a public way cannot be provided, a safe dispersal area shall be provided where all of the following are met:

1. The area shall be of a size to accommodate not less than 5 square feet (0.46 m²) for each person.
2. The area shall be located on the same lot not less than 50 feet (15 240 mm) away from the building requiring egress.
3. The area shall be permanently maintained and identified as a safe dispersal area.
4. The area shall be provided with a safe and unobstructed path of travel from the building.
5. The area shall be illuminated in accordance with Section 1008.

SECTION BC 1029 ASSEMBLY

1029.1 General. A room or space used for assembly purposes that contains seats, tables, displays, equipment or other material shall comply with this section.

1029.1.1 Bleachers. Bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply with ICC 300. Bleachers, folding and telescopic seating, and grandstands shall be permitted to be constructed of combustible or noncombustible materials in accordance with Section 302 of ICC 300 and the following:

1. Where the number of seats or seating positions of the bleachers, grandstands, and folding and telescopic seating within an assembly space exceeds 300, the dedicated structural system supporting the bleachers, folding and telescopic seating, or grandstands shall be constructed of noncombustible materials.
2. Where the space beneath the bleachers, grandstands, or folding and telescopic seating is used for placement of portable equipment, including but not limited to those for audio, video, data, lighting, motion control, and associated wiring, the decking on such bleachers, grandstands, or folding and telescopic seating shall be constructed of fire-retardant-treated wood complying with Section 2303.2 or other Class A materials.
3. Where the number of seats or seating positions of the bleachers, grandstands, and folding and telescopic seating within an assembly space exceeds 1,500, the dedicated structural system supporting the bleachers, grandstands, or folding and telescopic seating, and the decking on such bleachers, grandstands, or folding and telescopic seating, shall be constructed of noncombustible materials.

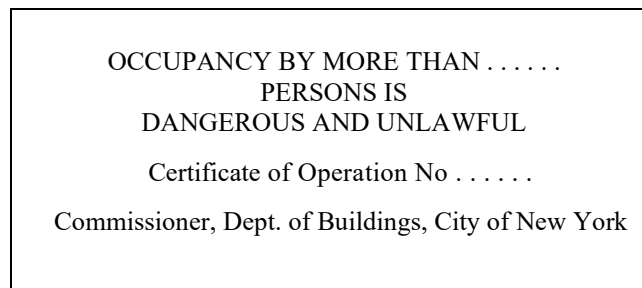
††† **1029.1.1.1 Spaces under grandstands and bleachers.** Where spaces under grandstands or bleachers are used for purposes other than ticket booths less than 100 square feet (9.29 m²); toilet rooms; or means of egress, such spaces shall be separated by fire barriers complying with Section 707 and horizontal assemblies complying with Section 711, with not less than 1-hour fire-resistance-rated construction. An automatic smoke detection system shall be installed in such separated spaces. The system shall be activated in accordance with Section 907.5.

1029.1.2 Place of assembly Certificate of Operation. A Certificate of Operation shall be required for a place of assembly in accordance with Section 303.7. It shall be unlawful to occupy any building or space as a place of assembly unless and until a Certificate of Operation therefore has been issued by the department pursuant to the provisions of Chapter 1 of Title 28 of the *Administrative Code*.

1029.1.3 Posted capacity sign. Signs shall be posted in all assembly spaces, indicating the number of persons who may legally occupy the space. Every room or space in such places of assembly shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design in accordance with Section 1029.1.4, and shall be maintained by the owner or the owner's authorized agent.

Exception: Signs shall not be required where seating is fixed in place in accordance with an approved plan and no provision is made for standee spaces.

Posted capacity signs, where required, shall read as follows:



1029.1.3.1 Multiple-occupant load sign. When a space is occupied for multiple purposes involving different occupant loads the sign shall read as follows:

OCCUPANCY BY MORE THAN (number) PERSONS AS (type of occupancy) . . . OR BY (number) PERSONS AS (type of occupancy) . . . OR BY (number) PERSONS AS (type of occupancy) . . . IS DANGEROUS AND UNLAWFUL Certificate of Operation No Commissioner, Dept. of Buildings, City of New York
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††† **1029.1.4 Design of capacity signs.** Signs shall be at least 12 inches (304.8 mm) wide and 16 inches (406.4 mm) high. The lettering shall be red on a white background. The letters shall be at least 1 inch (25.4 mm) high and the numerals at least 1 1/4 inches (31.75 mm) high. Signs shall be framed under a transparent protective cover, and permanently mounted in a location that is conspicuously visible to a person entering the space. Signs shall be lighted by artificial illumination at all times during occupancy to maintain at least 5 footcandles (54 lux) on the surface of the sign.

1029.1.5 Approved plans. In every place of assembly providing seating or other moveable furnishings, copies of approved plans and approved alternate plans shall be kept on the premises. The plans shall be readily available for inspection, and shall provide the following information:

1. For assembly spaces:
 - 1.1. The location of each seat of each tier of seating, along with the number of occupants of each seating section.
 - 1.2. The location and number of standees for each standee area.
 - 1.3. The total number of occupants of each tier and of the assembly space.
 - 1.4. The location and classification of all exits.
2. For safe areas:
 - 2.1. The furniture and equipment arrangement and location.
 - 2.2. The number of occupants to be accommodated.
3. For stage areas:
 - 3.1. The maximum number of occupants, including audience seating on the stage.
 - 3.2. Any conditions limiting the use of the stage area.
 - 3.3. The location of all exits.

These plans shall not be smaller in size than required for 1/8-inch (3.2 mm) scale plans.

1029.2 Assembly with occupant load greater than 300. A building, room or space used for assembly purposes that has an occupant load of greater than 300 and is provided with a main exit, that main exit shall be of sufficient capacity to accommodate not less than one-half of the occupant load, but such capacity shall be not less than the total required capacity of all means of egress leading to the exit. Where the main use or dominant occupancy of the building is classified as a Group A occupancy, the main exit shall front on not less than one street or an unoccupied space of not less than 10 feet (3048 mm) in width that adjoins a street or public way. Other additional exits shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1007.1.

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Exception: In a building, room or space used for assembly purposes where there is not a well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total capacity of egress is not less than 100 percent of the required capacity.

1029.3 Reserved.

1029.4 Foyers and lobbies. In Group A-1 occupancies, where persons are admitted to the building at times when seats are not available, such persons shall be allowed to wait in a lobby or similar space, provided such lobby or similar space shall not encroach upon the minimum width or required capacity of the means of egress. Such foyer, if not directly connected to a public street by all the main entrances or exits, shall have a straight and unobstructed corridor or path of travel to every such main entrance or exit.

1029.5 Interior balcony and gallery means of egress. For balconies, galleries or press boxes having a seating capacity of 75 or more located in a building, room or space used for assembly purposes, not less than two means of egress shall be provided, with one from each side of every balcony, gallery or press box.

1029.5.1 Accessible means of egress. At least one accessible means of egress is required from a balcony, gallery or press box level containing accessible seating locations in accordance with Section 1009.3 or 1009.4.

1029.6 Capacity of aisle for assembly. The required capacity of aisles shall be not less than that determined in accordance with Section 1029.6.1 where smoke-protected assembly seating is not provided and with Section 1029.6.2 or 1029.6.3 where smoke-protected assembly seating is provided.

1029.6.1 Without smoke protection. The required capacity in inches (mm) of the aisles for assembly seating without smoke protection shall be not less than the occupant load served by the egress element in accordance with all of the following, as applicable:

1. Not less than 0.3 inch (7.6 mm) of aisle capacity for each occupant served shall be provided on stepped aisles having riser heights 7 inches (177.8 mm) or less and tread depths 11 inches (279.4 mm) or greater, measured horizontally between tread nosings.
2. Not less than 0.005 inch (0.127 mm) of additional aisle capacity for each occupant shall be provided for each 0.10 inch (2.5 mm) of riser height above 7 inches (177.8 mm).
3. Where egress requires stepped aisle descent, not less than 0.075 inch (1.9 mm) of additional aisle capacity for each occupant shall be provided on those portions of aisle capacity having no handrail within a horizontal distance of 30 inches (762 mm).
4. Ramped aisles, where slopes are steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have not less than 0.22 inch (5.6 mm) of clear aisle capacity for each occupant served. Level or ramped aisles, where slopes are not steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have not less than 0.20 inch (5.1 mm) of clear aisle capacity for each occupant served.

1029.6.2 Smoke-protected assembly seating. The required capacity in inches (mm) of the aisle for smoke-protected assembly seating shall be not less than the occupant load served by the egress element multiplied by the appropriate factor in Table 1029.6.2 of this code. The total number of seats specified shall be those within the space and exposed to the same smoke-protected environment. Interpolation is permitted between the specific values shown. A life safety evaluation, complying with NFPA 101, shall be done for a facility utilizing the reduced width requirements of Table 1029.6.2 of this code for smoke-protected assembly seating subject to the approval by the commissioner.

Exception: For outdoor smoke-protected assembly seating with an occupant load not greater than 18,000, the required capacity in inches (mm) shall be determined using the factors in Section 1029.6.3.

**TABLE 1029.6.2
CAPACITY FOR AISLES FOR SMOKE-PROTECTED ASSEMBLY**

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY SEATING	INCHES OF CLEAR WIDTH PER SEAT SERVED			
	Stepped aisles with handrails within 30 inches	Stepped aisles without handrails within 30 inches	Level aisles or ramped aisles not steeper than 1 in 10 in slope	Ramped aisles-steeper than 1 in 10 in slope

Equal to or less than 5,000	0.200	0.250	0.150	0.165
10,000	0.130	0.163	0.100	0.110
15,000	0.096	0.120	0.070	0.077
20,000	0.076	0.095	0.056	0.062
Equal to or greater than 25,000	0.060	0.075	0.044	0.048

For SI: 1 inch = 25.4 mm.

1029.6.2.1 Smoke control. Aisles and aisle accessways serving a smoke-protected assembly seating area shall be provided with a smoke control system complying with Section 909 or natural ventilation designed to maintain the smoke level not less than 6 feet (1828.8 mm) above the floor of the means of egress.

1029.6.2.2 Roof height. A smoke-protected assembly seating area with a roof shall have the lowest portion of the roof deck not less than 15 feet (4572 mm) above the highest aisle or aisle accessway.

Exception: A roof canopy in an outdoor stadium shall be permitted to be less than 15 feet (4572 mm) above the highest aisle or aisle accessway provided that there are no objects less than 80 inches (2032 mm) above the highest aisle or aisle accessway.

1029.6.2.3 Automatic sprinklers. Enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

Exceptions:

1. The floor area used for contests, performances or entertainment, provided the roof construction is more than 50 feet (15 240 mm) above the floor level and the use is restricted to low fire hazard uses.
2. Press boxes and storage facilities less than 1,000 square feet (92.9 m²) in area.
3. Outdoor seating facilities where seating and the means of egress in the seating area are essentially open to the outside.

1029.6.3 Outdoor smoke-protected assembly seating. The required capacity in inches (mm) of aisles shall be not less than the total occupant load served by the egress element multiplied by 0.08 (2.0 mm) where egress is by stepped aisle and multiplied by 0.06 (1.52 mm) where egress is by ramps, corridors, tunnels, vomitories, level aisles or ramped aisles.

Exception: The required capacity in inches (mm) of aisles shall be permitted to comply with Section 1029.6.2 for the number of seats in the outdoor smoke-protected assembly seating where Section 1029.6.2 permits less capacity.

1029.7 Travel distance. Exits and aisles shall be so located such that the travel distance to an exit door shall be provided in accordance with Table 1029.7. At least one exit door shall be available from every attached seat or standee space in an assembly space, or from the most remote point in the space when movable seats are provided or, when no seats are provided, within the primary travel distance limitation listed in Table 1029.7. In addition, an alternate exit door shall be available from every attached seat or standee space, or from the most remote point when attached seats are not provided within the secondary travel distance limitation listed in Table 1029.7. Such alternate exit door may serve to satisfy the requirements for primary travel distance for other seats or locations. Exit door satisfying the primary and secondary travel distance requirements for any one seat or location shall be separated in accordance with Section 1007.1. Where aisles are provided for seating, the distance shall be measured along the aisles and aisle accessway without travel over or on the seats.

Exceptions: For the purposes of this section, travel distances may be measured in accordance with the following exceptions:

1. Smoke-protected assembly seating: The primary travel distance shall be permitted to be measured from each seat or standee space to the nearest entrance to a vomitory or concourse, and shall not exceed 200 feet (60 960 mm). The secondary travel distance shall be permitted to be measured from each such seat or standee space to an alternate entrance to the vomitory or concourse, and shall not exceed 300 feet (91 440 mm). The travel

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distance from any such entrances to the vomitory or concourse to a stairway, ramp or walk on the exterior of the building shall not exceed 200 feet (60 960 mm).

2. Open-air seating served by exit access stairways and ramps: The primary travel distance shall be permitted to be measured from each seat or standee space to the closest riser of an exit access stairway or the closest slope of an exit access ramp that are outside the assembly space. The secondary travel distance shall be permitted to be measured to the closest riser of an alternate exit access stairway or the closest slope of an alternate exit access ramp that are outside the assembly space.
3. Assembly with safe areas: Where an assembly space is provided with an exit access doorway that opens directly to a safe area in accordance with Section 1029.19, the primary travel distance shall be permitted to be measured to such an exit access doorway. The secondary travel distances shall also be permitted to be measured to an alternate exit access doorway that opens directly to a safe area. The travel distance within safe areas shall be in accordance with Section 1017 based on the occupancy classification of the main occupancy of the building or portion thereof to which the assembly space is ancillary. Where a safe area contains other occupancies, travel distances within such safe area shall comply with Section 1017.
4. Assembly with open exterior spaces: Where an assembly space is provided with an exit that opens directly to an open exterior space in accordance with Section 1029.19, the primary and secondary travel distances shall be measured to such an exit.

**TABLE 1029.7
TRAVEL DISTANCE**

OCCUPANCY	NON-SPRINKLERED		SPRINKLERED	
	PRIMARY	SECONDARY	PRIMARY	SECONDARY
A-1, A-2, A-3, A-4	100	150	150	250
A-5	200	300	200	300

1029.8 Common path of egress travel. The common path of egress travel shall not exceed 30 feet (9144 mm) from any seat to a point where an occupant has a choice of two paths of egress travel to two exits.

Exceptions:

1. For areas, such as box seats, galleries or balconies, serving less than 75 occupants, the common path of egress travel shall not exceed 75 feet (22 860 mm).
2. For smoke-protected assembly seating, the common path of egress travel shall not exceed 50 feet (15 240 mm).

1029.8.1 Path through adjacent row. Where one of the two paths of travel is across the aisle through a row of seats to another aisle, there shall be not more than 24 seats between the two aisles, and the minimum clear width between rows for the row between the two aisles shall be 12 inches (304.8 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row between aisles.

Exception: For smoke-protected assembly seating there shall be not more than 40 seats between the two aisles and the minimum clear width shall be 12 inches (304.8 mm) plus 0.3 inch (7.6 mm) for each additional seat.

1029.9 Assembly aisles are required. Every occupied portion of any building, room or space used for assembly purposes that contains seats, tables, displays, similar fixtures or equipment shall be provided with aisles leading to exits or exit access doorways in accordance with this section.

1029.9.1 Minimum aisle width. The minimum clear width for aisles shall comply with one of the following:

1. Forty-eight inches (1220 mm) for stepped aisles having seating on each side.

Exception: Thirty-six inches (914.4 mm) where the stepped aisles serve less than 51 seats.

2. Thirty-six inches (914.4 mm) for stepped aisles having seating on only one side.

Exception: Twenty-three inches (584 mm) between a stepped aisle handrail and seating where a stepped aisle does not serve more than five rows on one side.

3. Twenty-three inches (584 mm) between an aisle stair handrail or guard and seating where the stepped aisle is subdivided by a mid-aisle handrail.
4. Forty-two inches (1066.8 mm) for level or ramped aisles having seating on both sides.

Exception: Thirty-six inches (914.4 mm) where the aisle serves less than 51 seats.

5. Thirty-six inches (914.4 mm) for level or ramped aisles having seating on only one side.
6. Thirty-six inches (914.4 mm) for aisles other than those listed above and cross-aisles serving less than 51 persons.

1029.9.2 Aisle catchment area. The aisle shall provide sufficient capacity for the number of persons accommodated by the catchment area served by the aisle. The catchment area served by an aisle is that portion of the total space served by that section of the aisle. In establishing catchment areas, the assumption shall be made that there is a balanced use of all means of egress, with the number of persons in proportion to egress capacity.

1029.9.3 Converging aisles. Where aisles converge to form a single path of egress travel, the required capacity of that path shall be not less than the combined required capacity of the converging aisles.

1029.9.4 Uniform width and capacity. Those portions of aisles, where egress is possible in either of two directions, shall be uniform minimum width or required capacity.

1029.9.5 Dead-end aisles. Each end of an aisle shall be continuous to a cross aisle, foyer, doorway, vomitory, concourse or stairway in accordance with Section 1029.9.7 having access to an exit. Travel through dead-end aisles shall be subject to Section 1029.8. Dead-end aisles shall be not greater than 20 feet (6096 mm) in length.

Exceptions:

1. A dead-end aisle of up to 16 rows shall be permitted to exceed 20 feet (6096 mm) in length where seats served by the dead-end aisle are not more than 24 seats from another aisle, measured along a row of seats having a clear width of not less than 12 inches (304.8 mm) plus 0.6 inches (15.2 mm) for each additional seat over a total of 7 in the row.
2. For smoke-protected assembly seating, dead end aisles of up to 21 rows may be permitted to exceed 20 feet (6096 mm) in length provided seats served by the dead-end aisle are not more than 40 seats from another aisle, measured along a row of seats having a clear width of not less than 12 inches (304.8 mm) plus 0.3 inches (7.6 mm) for each additional seat over a total of 7 in the row.

1029.9.6 Aisle measurement. The clear width for aisles shall be measured to walls, edges of seating and tread edges except for permitted projections.

Exception: The clear width of aisles adjacent to seating at tables shall be permitted to be measured in accordance with Section 1029.12.1.

1029.9.6.1 Assembly aisle obstructions. There shall not be obstructions in the minimum width or required capacity of aisles.

Exception: Handrails are permitted to project into the required width of stepped aisles and ramped aisles in accordance with Section 1014.8.

1029.9.7 Stairways connecting to stepped aisles and vomitories. A stairway that connects a stepped aisle or a vomitory to a cross aisle, concourse, or to another aisle shall be permitted to comply with the assembly aisle walking surface requirements of Section 1029.13. Transitions between stairways and stepped aisles shall comply with Section 1029.10.

1029.10 Transitions. Transitions between stairways and stepped aisles shall comply with either Section 1029.10.1 or 1029.10.2.

1029.10.1 Transitions and stairways that maintain stepped aisle riser and tread dimensions. Stepped aisles, transitions and stairways that maintain riser and tread dimensions shall comply with Section 1029.13 as one exit access component.

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1029.10.2 Transitions to stairways that do not maintain stepped aisle riser and tread dimensions. Transitions to stairways from stepped aisles with riser and tread dimensions that differ from the stairways shall comply with Sections 1029.10.2.1 through 1029.10.3.

1029.10.2.1 Stairways and stepped aisles in a straight run. Transitions where the stairway is a straight run from the stepped aisle shall have a minimum depth of 22 inches (558.8 mm) where the treads on the descending side of the transition have greater depth and 30 inches (762 mm) where the treads on the descending side of the transition have lesser depth.

1029.10.2.2 Stairways and stepped aisles that change direction. Transitions where the stairway changes direction from the stepped aisle shall have a minimum depth of 11 inches (279.4 mm) or the stepped aisle tread depth, whichever is greater, between the stepped aisle and stairway.

1029.10.3 Transition marking. A distinctive marking stripe shall be provided at each nosing or leading edge adjacent to the transition. Such stripe shall be not less than 1 inch (25.4 mm), and not more than 2 inches (50.8 mm), wide. The edge marking stripe shall be distinctively different from the stepped aisle contrasting marking stripe.

1029.11 Construction. Aisles, stepped aisles and ramped aisles shall be built of materials consistent with the types permitted for the type of construction of the building.

Exception: Wood handrails shall be permitted for all types of construction. Bleachers, grandstands and folding and telescopic seating shall be built of materials permitted by Section 1029.1.1.

1029.11.1 Walking surface. The surface of aisles, stepped aisles and ramped aisles shall be of slip-resistant materials that are securely attached. The surface for stepped aisles shall comply with Section 1011.7.1.

1029.11.2 Outdoor conditions. Outdoor aisles, stepped aisles and ramped aisles and outdoor approaches to aisles, stepped aisles and ramped aisles shall be designed so that water will not accumulate on the walking surface.

1029.12 Aisle accessways. Aisle accessways for seating at tables shall comply with Section 1029.12.1. Aisle accessways for seating in rows shall comply with Section 1029.12.2.

1029.12.1 Seating at tables. Where seating is located at a table or counter and is adjacent to an aisle or aisle accessway, the measurement of required clear width of the aisle or aisle accessway shall be made to a line 19 inches (482.6 mm) away from and parallel to the edge of the table or counter. The 19-inch (482.6 mm) distance shall be measured perpendicular to the side of the table or counter. In the case of other side boundaries for aisles or aisle accessways, the clear width shall be measured to walls, edges of seating and tread edges.

Exception: Where tables or counters are served by fixed seats, the width of the aisle or aisle accessway shall be measured from the back of the seat.

1029.12.1.1 Aisle accessway capacity and width for seating at tables. Aisle accessways serving arrangements of seating at tables or counters shall comply with the capacity requirements of Section 1005 but shall not have less than 12 inches (304.8 mm) of width plus $\frac{1}{2}$ inch (12.7 mm) of width for each additional 1 foot (304.8 mm), or fraction thereof, beyond 12 feet (3657.6 mm) of aisle accessway length measured from the center of the seat farthest from an aisle.

Exception: Portions of an aisle accessway having a length not exceeding 6 feet (1828.8 mm) and used by a total of not more than four persons.

1029.12.1.2 Seating at table aisle accessway length. The length of travel along the aisle accessway shall not exceed 30 feet (9144 mm) from any seat to the point where a person has a choice of two or more paths of egress travel to separate exits.

1029.12.2 Clear width of aisle accessways serving seating in rows. Where seating rows have 14 or fewer seats, the minimum clear aisle accessway width shall be not less than 12 inches (304.8 mm) measured as the clear horizontal distance from the back of the row ahead and the nearest projection of the row behind. Where chairs have automatic or self-rising seats, the measurement shall be made with seats in the raised position. Where any chair in the row does not have an automatic or self-rising seat, the measurements shall be made with the seat in the down position. For seats with folding tablet arms, row spacing shall be determined with the tablet arm in the used position.

Exception: For seats with folding tablet arms, row spacing is permitted to be determined with the tablet arm in the stored position where the tablet arm when raised manually to vertical position in one motion automatically returns to the stored position by force of gravity.

1029.12.2.1 Dual access. For rows of seating served by aisles or doorways at both ends, there shall be not more than 100 seats per row. The minimum clear width of 12 inches (304.8 mm) between rows shall be increased by 0.3 inch (7.6 mm) for every additional seat beyond 14 seats where seats have backrests or beyond 21 where seats are without backrests. The minimum clear width is not required to exceed 22 inches (558.8 mm).

Exception: For smoke-protected assembly seating, the row length limits for a 12-inch-wide (304.8 mm) aisle accessway, beyond which the aisle accessway minimum clear width shall be increased, are in Table 1029.12.2.1.

**TABLE 1029.12.2.1
SMOKE-PROTECTED ASSEMBLY AISLE ACCESSWAYS**

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY SEATING	MAXIMUM NUMBER OF SEATS PER ROW PERMITTED TO HAVE A MINIMUM 12-INCH CLEAR WIDTH AISLE ACCESSWAY	
	Aisle or doorway at both ends of row	
	Seats with backrests	Seats without backrests
Less than 4,000	14	21
4,000	15	22
7,000	16	23
10,000	17	24
13,000	18	25
16,000	19	26
19,000	20	27
22,000 and greater	21	28

For SI: 1 inch = 25.4 mm.

1029.12.2.2 Single access. For rows of seating served by an aisle or doorway at only one end of the row, the minimum clear width of 12 inches (304.8 mm) between rows shall be provided. Not more than eight chairs shall be provided in such row of seating.

1029.13 Assembly aisle walking surfaces. Ramped aisles shall comply with Section 1029.13.1. Stepped aisles shall comply with Section 1029.13.2.

1029.13.1 Ramped aisles. Aisles that are sloped more than one unit vertical in 20 units horizontal (5-percent slope) shall be considered a ramped aisle. Ramped aisles that serve as part of an accessible route in accordance with Sections 1009 and 1108.2 shall have a maximum slope of one unit vertical in 12 units horizontal (8-percent slope). The slope of other ramped aisles shall not exceed one unit vertical in 8 units horizontal (12.5-percent slope).

1029.13.1.1 Cross slope. The slope measured perpendicular to the direction of travel of a ramped aisle shall not be steeper than one unit vertical in 48 units horizontal (2-percent slope).

1029.13.1.2 Landings. Ramped aisles shall have landings in accordance with Sections 1012.6 through 1012.6.5. Landings for ramped aisles shall be permitted to overlap required aisles or cross aisles.

1029.13.1.3 Edge protection. Ramped aisles shall have edge protection in accordance with Section 1012.10 and 1012.10.1.

Exception: In assembly spaces with fixed seating, edge protection is not required on the sides of ramped aisles where the ramped aisles provide access to the adjacent seating and aisle accessways.

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1029.13.2 Stepped aisles. Aisles with a slope exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a series of risers and treads that extends across the full width of aisles and complies with Sections 1029.13.2.1 through 1029.13.2.4.

1029.13.2.1 Treads. Tread depths shall be not less than 11 inches (279.4 mm) and shall have dimensional uniformity.

Exception: The tolerance between adjacent treads shall not exceed $\frac{3}{16}$ inch (4.8 mm).

1029.13.2.2 Risers. Where the gradient of stepped aisles is to be the same as the gradient of adjoining seating areas, the riser height shall be not less than 4 inches (101.6 mm) nor more than 8 inches (203.2 mm) and shall be uniform within each flight.

Exception: Riser height nonuniformity shall be limited to the extent necessitated by changes in the gradient of the adjoining seating area to maintain adequate sightlines. Where nonuniformities exceed $\frac{3}{16}$ inch (4.8 mm) between adjacent risers, the exact location of such nonuniformities shall be indicated with a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers. Such stripe shall be not less than 1 inch (25.4 mm), and not more than 2 inches (50.8 mm), wide. The edge marking stripe shall be distinctively different from the contrasting marking stripe.

††† 1029.13.2.2.1 Construction tolerances. The tolerance between adjacent risers on a stepped aisle that were designed to be equal height shall not exceed $\frac{3}{16}$ inch (4.8 mm). Where the stepped aisle is designed in accordance with the exception of Section 1029.13.2.2, the stepped aisle shall be constructed so that each riser of unequal height, determined in the direction of descent, is not more than $\frac{3}{8}$ inch (9.5 mm) in height different from adjacent risers where stepped aisle treads are less than 22 inches (560 mm) in depth and $\frac{3}{4}$ inch (19.1 mm) in height different from adjacent risers where stepped aisle treads are 22 inches (558.8 mm) or greater in depth.

1029.13.2.3 Tread contrasting marking stripe. A contrasting marking stripe shall be provided on each tread at the nosing or leading edge such that the location of each tread is readily apparent when viewed in descent. Such stripe shall be not less than 1 inch (25.4 mm), and not more than 2 inches (50.8 mm), wide.

Exception: The contrasting marking stripe is permitted to be omitted where tread surfaces are such that the location of each tread is readily apparent when viewed in descent.

1029.13.2.4 Nosing and profile. Nosing and riser profile shall comply with Sections 1011.5.5 through 1011.5.5.3.

1029.13.3 Aisle illumination. Aisles, cross aisles and stepped aisles shall be illuminated in accordance with Section 1008.2.1.

1029.14 Seat stability. In a building, room or space used for assembly purposes, the seats shall be securely fastened to the floor.

Exceptions:

1. In a building, room or space used for assembly purposes or portions thereof for seating and with 200 or fewer seats, the seats shall not be required to be fastened to the floor, provided that the seating area has a minimum net floor area of 12 square feet (1.11 m²) per person or all seats in a row shall be fastened together with a maximum of 12 seats between aisles where 12 square feet (1.11 m²) per person is not provided.
2. In a building, room or space used for assembly purposes or portions thereof with seating at tables and without ramped or tiered floors for seating, the seats shall not be required to be fastened to the floor.
3. In a building, room or space used for assembly purposes or portions thereof with seating at tables on ramped or tiered floors, the seats shall not be required to be fastened to the floor provided that the seating area has a minimum net floor area of 12 square feet (1.11 m²) per person.
4. In a building, room or space used for assembly purposes or portions thereof for seating and with greater than 200 seats, the seats shall be securely fastened to the floor, or all seats in a row shall be fastened together with a maximum of 12 seats between aisles.
5. In a building, room or space used for assembly purposes where flexibility of the seating arrangement is an integral part of the design and function of the space, a seating area of up to 200 seats shall not be required to

be fastened to the floor, provided that the seating area has a minimum net floor area of 12 square feet (1.11 m²) per person or all seats in a row in such seating area shall be fastened together with a maximum of 12 seats between aisles where 12 square feet (1.11 m²) per person is not provided.

6. Groups of seats within a building, room or space used for assembly purposes separated from other seating by railings, guards, partial height walls or similar barriers with level floors and having not more than 14 seats per group shall not be required to be fastened to the floor.
7. Seats intended for musicians or other performers and separated by railings, guards, partial height walls or similar barriers shall not be required to be fastened to the floor.

Where a building, room or space used for assembly purposes includes mixed seating arrangements and conditions, the seat stability requirements and allowances shall be applied respectively to each portion of the space containing such seating.

1029.15 Handrails. Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and stepped aisles shall be provided with handrails in compliance with Section 1014 located either at one or both sides of the aisle or within the aisle width.

Exceptions:

1. Handrails are not required for ramped aisles with seating on both sides.
2. Handrails are not required where, at the side of the aisle, there is a guard with a top surface that complies with the graspability requirements of handrails in accordance with Section 1014.3.
3. Handrail extensions are not required at the top and bottom of stepped aisles and ramped aisles to permit crossovers within the aisles.

1029.15.1 Discontinuous handrails. Where there is seating on both sides of the aisle, the mid-aisle handrails shall be discontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of not less than 22 inches (558.8 mm) and not greater than 36 inches (914.4 mm), measured horizontally, and the mid-aisle handrail shall have rounded terminations or bends.

1029.15.2 Handrail termination. Handrails located on the side of stepped aisles shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent stepped aisle flight.

1029.15.3 Mid-aisle termination. Mid-aisle handrails shall not extend beyond the lowest riser and shall terminate within 18 inches (457.2 mm), measured horizontally, from the lowest riser. Handrail extensions are not required.

Exception: Mid-aisle handrails shall be permitted to extend beyond the lowest riser where the handrail extensions do not obstruct the width of the cross aisle.

1029.15.4 Rails. Where mid-aisle handrails are provided in stepped aisles, there shall be an additional rail located approximately 12 inches (304.8 mm) below the handrail. The rail shall be adequate in strength and attachment in accordance with Section 1607.8.1.2.

1029.16 Assembly guards. Guards adjacent to seating in a building, room or space used for assembly purposes shall be provided where required by Section 1015 of this code and shall be constructed in accordance with Section 1015 except where provided in accordance with Sections 1029.16.1 through 1029.16.5 of this code. At bleachers, grandstands and folding and telescopic seating, guards must be provided where required by ICC 300 and Section 1029.16.1 of this code.

1029.16.1 Perimeter guards. Perimeter guards shall be provided where the footboards or walking surface of seating facilities are more than 30 inches (762 mm) above the floor or grade below. Where the seatboards are adjacent to the perimeter, guard height shall be 42 inches (1066.8 mm) high minimum, measured from the seatboard. Where the seats are self-rising, guard height shall be 42 inches (1066.8 mm) high minimum, measured from the floor surface. Where there is an aisle between the seating and the perimeter, the guard height shall be measured in accordance with Section 1015.2.

Exceptions:

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1. Guards that impact sightlines shall be permitted to comply with Section 1029.16.3.
2. Bleachers, grandstands and folding and telescopic seating shall not be required to have perimeter guards where the seating is located adjacent to a wall and the space between the wall and the seating is less than 4 inches (101.6 mm).

1029.16.2 Cross aisles. Cross aisles located more than 30 inches (762 mm) above the floor or grade below shall have guards in accordance with Section 1015.

Where an elevation change of 30 inches (762 mm) or less occurs between a cross aisle and the adjacent floor or grade below, guards not less than 26 inches (660.4 mm) above the aisle floor shall be provided.

Exception: Where the backs of seats on the front of the cross aisle project 24 inches (609.6 mm) or more above the adjacent floor of the aisle, a guard need not be provided.

1029.16.3 Sightline-constrained guard heights. Unless subject to the requirements of Section 1029.16.4, a fascia or railing system in accordance with the guard requirements of Section 1015 and having a minimum height of 26 inches (660.4 mm) shall be provided where the floor or footboard elevation is more than 30 inches (762 mm) above the floor or grade below and the fascia or railing would otherwise interfere with the sightlines of immediately adjacent seating.

1029.16.4 Guards at the end of aisles. A fascia or railing system complying with the guard requirements of Section 1015 shall be provided for the full width of the aisle where the foot of the aisle is more than 30 inches (762 mm) above the floor or grade below. The fascia or railing shall be a minimum of 36 inches (914.4 mm) high and shall provide a minimum 42 inches (1066.8 mm) measured diagonally between the top of the rail and the nosing of the nearest tread.

1029.16.5 Toe guard at balconies. An unperforated curb or toe guard at least 12 inches (304.8 mm) high above the level of the floor shall be provided at the fascia of all balconies.

1029.17 Bench seating. Where bench seating is used, the number of persons shall be based on one person for each 18 inches (457.2 mm) of length of the bench.

1029.18 Standing spaces. Standing spaces may be permitted within assembly spaces provided each standee has a minimum of 5 square feet (0.47 m²) of occupiable floor space. Standing spaces shall not encroach on the required exit facilities and shall be separated from the space to be left clear for passage.

1029.19 Places of assembly with an occupant load of less than 12 square feet per person. Places of assembly in which the net floor area, exclusive of stage area, is less than 12 square feet (1.11 m²) per person shall have special egress provisions in accordance with this section.

1029.19.1 Classification of exit access doorways and exits. For the purposes of Section 1029.19, exit access doorways and exits shall be classified as follows:

1. Class 1—Exit access doorways and exits that are used for normal entry to the assembly space, and that open directly to a safe area or to an open exterior space.
2. Class 2—Exit access doorways and exits that are not used for normal entry to the assembly space, and that open directly to a safe area or to an open exterior space.
3. Class 3—Exit access doorways and exits that open from the assembly space into corridors, exit passageways or vertical exits.

1029.19.2 Distribution of classes. The required exit capacity from assembly spaces in which the net floor area, exclusive of stage area, is less than 12 square feet (1.11 m²) per person shall be distributed so that exit access doorways and exits of each class are provided to comply with the following requirements:

1. For assembly spaces in which the mean floor level is not more than 15 feet (4572 mm) above or below the adjoining grade elevation, the exit capacity shall be distributed as follows:
 - 1.1. Class 1—not less than 40 percent.
 - 1.2. Class 2—not more than 60 percent.
 - 1.3. Class 3—not more than 40 percent.

2. For assembly spaces in which the mean floor level is more than 15 feet (4572 mm) above or below the adjoining grade elevation, the exit capacity shall be distributed as follows:
 - 2.1. Class 1—not less than 60 percent.
 - 2.2. Class 3—not more than 40 percent.

1029.19.3 Safe areas. The capacity of exits from safe areas shall be provided for all occupants of the safe area. Safe areas shall comply with the following requirements:

1. When provided to serve Class 1 or 2 exit access doorways, safe areas shall be separated from assembly spaces by fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, each having a 2-hour fire-resistance rating. Such safe areas shall serve as transition areas in the line and direction of exit travel. They shall serve for normal entry to the assembly space and may be used as corridors, lobbies or lounges.
2. No room or space classified in Occupancy Group H, S-1, F-1 or F-2 shall open upon a safe area.
3. Safe areas shall be at a level not more than 6 feet (1828.8 mm) above or below the level at which egress is made from the assembly space.
4. Ventilating systems for safe areas shall not be connected to systems serving any other spaces, unless separated from such systems by fire/smoke dampers actuated by smoke detectors.
5. Collecting safe areas. Places of assembly having more than one assembly space may have a collecting safe area that receives the occupant load discharged into it by other safe areas. Collecting safe areas shall be located within 6 feet (1828.8 mm) above or below the assembly space nearest to grade.
6. Occupant load. The occupant load of a safe area shall be the aggregate occupant load of all exit access doorways discharging directly into it. The occupant load of a collecting safe area shall be the aggregate occupant load of all exit access doorways discharging directly into it, plus 50 percent of the occupant load of other safe areas discharging into it.
7. Dimensions. The clear unobstructed floor area of each safe area shall be sufficient to accommodate the total occupant load of the safe area on the basis of 3 square feet (0.28 m²) per person, not including space occupied by furniture or equipment. The minimum dimension of such unobstructed space shall be 8 feet (2438.4 mm). The width of the unobstructed space shall be measured at right angles to the direction of travel to an exit and shall not be less than required for the occupant load. The height of safe areas shall be at least 8 feet (2438.4 mm) at all points.
8. Safe areas near grade. When a safe area provides egress to an open exterior space, either directly or through a vestibule, the safe area need not provide the floor area required by this section when the level of discharge from the safe area to the open exterior space is not more than 4 feet (1220 mm) above or below the grade of the open exterior space.

1029.19.3.1 Unenclosed exit access stairways and ramps. Where permitted by Section 1019, exit access stairways or ramps leading directly from one safe area to another, or leading from a safe area directly to an open exterior space, need not be enclosed. Travel distance on such unenclosed exit access stairway or ramp shall be in accordance with the primary travel distance in Table 1029.7, and shall be measured in accordance with Section 1017.3.1.

1029.19.3.2 Safe area lighting. In addition to requirements of Section 1008, safe areas shall be artificially lighted by electrical means at all times during occupancy of a place of assembly so as to provide illumination of at least 5 footcandles (54 lux) at the level of the floor and on the surface of all stairs, steps, ramps, and escalators within the safe area.

1029.19.4 Open exterior space. The following provisions shall apply when an open exterior space is used as an exit discharge:

1. **Capacity.** Open exterior spaces shall be adequate in width and area to accommodate the accumulated occupant load of all exits discharging into them on the basis of 2 square feet (0.19 m²) per person.

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2. **Minimum dimensions.** The minimum dimension of open exterior spaces shall be 20 feet (6096 mm), except that when the principal entrance to the place of assembly is from an open exterior space, the minimum dimension of this space shall be 30 feet (9144 mm). No open exterior space shall have less than 400 square feet (37.2 m²) of floor area, and floor area shall be measured exclusive of the following:
 - 2.1. The area immediately outside any exit door from the place of assembly for a distance perpendicular to the exit doors of 10 feet (3048 mm) for the full width of the exit opening.
 - 2.2. The area of steps, platforms, stairs, or ramps within or leading to or from the space.
 - 2.3. The area of obstructions such as shrubs, trees, fixed furniture, signs, sculptures, pools, and similar obstructions to occupancy or exit travel.
3. **Above or below grade.** When an open exterior space is more than 15 feet (4572 mm) above or below the grade of the street or public space to which it discharges, its required area shall be increased by one-third.
4. **Egress from open exterior spaces.** Exterior exit passageways, ramps, or steps leading from open exterior spaces shall be not less in width than required for the occupant load of all exits discharging into the open exterior space. The width of such exit passageways shall be based on the capacities listed in Section 1005.1, but in no case less than 10 feet (3048 mm).
5. **Open exterior spaces.** Yards or courts that serve as open exterior spaces shall be artificially lighted by electrical means at all times between sunset and sunrise during occupancy of a place of assembly so as to provide illumination of at least 5 footcandles (54 lux) at the level of the floor over at least the required area.

SECTION BC 1030 EMERGENCY ESCAPE AND RESCUE

1030.1 General. In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue openings in Group R-2 occupancies that are subject to Table 1006.3.2, and Group R-3 occupancies. Sleeping rooms below the fourth story above grade plane and below-grade stories shall have at least one exterior emergency escape and rescue opening in accordance with this section. Where below-grade stories contain one or more sleeping rooms, emergency escape and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of such below-grade story. Such openings shall open directly into a public way or to a yard or court that opens to a public way.

Exceptions:

1. Sleeping rooms provided with a door to a fire-resistance-rated corridor having access to two remote exits in opposite directions.
2. Emergency escape and rescue openings are not required from below-grade stories or sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court or exterior exit balcony that opens to a public way.
3. Below-grade stories without habitable spaces and having not more than 200 square feet (18.6 m²) in floor area shall not be required to have emergency escape and rescue openings.

1030.2 Minimum size. Emergency escape and rescue openings shall have a minimum net clear opening of 6 square feet (0.56 m²).

Exception: The minimum net clear opening for grade-floor emergency escape and rescue openings shall be 5 square feet (0.46 m²) unless such opening is required for natural ventilation in accordance with Chapter 12.

1030.2.1 Minimum dimensions. The minimum net clear opening height dimension shall be 30 inches (762 mm). The net clear opening width dimension shall not be less than 24 inches (609.6 mm). The final dimensions shall result in a net clear opening area as required above. The net clear opening dimensions shall be the result of normal operation of the opening.

1030.3 Maximum height from floor. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 36 inches (914.4 mm) measured from the floor.

1030.4 Operational constraints. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools in accordance with the provisions of Chapter 10 of the *New York City Fire Code*.

1030.5 Window wells. An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall be provided with a window well in accordance with Sections 1030.5.1 and 1030.5.2.

1030.5.1 Minimum size. The minimum horizontal area of the window well shall be 9 square feet (0.84 m²), with a minimum dimension of 36 inches (914.4 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

1030.5.2 Ladders or steps. Window wells with a vertical depth of more than 44 inches (1117.6 mm) shall be equipped with an approved permanently affixed ladder or steps. Ladders or rungs shall have an inside width of at least 12 inches (304.8 mm), shall project at least 3 inches (76.2 mm) from the wall and shall be spaced not more than 18 inches (457.2 mm) on center (o.c.) vertically for the full height of the window well. The ladder or steps shall not encroach into the required dimensions of the window well by more than 6 inches (152.4 mm). The ladder or steps shall not be obstructed by the emergency escape and rescue opening. Ladders or steps required by this section are exempt from the stairway requirements of Section 1011.

SECTION BC 1031 SIGNAGE

1031.1 Signage. Signage shall be provided in accordance with this section and the rules of the department.

1031.2 Exit signs. Exits signs shall be provided in accordance with Section 1013.

1031.3 Stairway and elevator identification signs. Stairway floor number and stairway identification signs shall be provided in accordance with Section 1023.9. Elevator identification and emergency signs shall be provided in accordance with Section 3002.3.

1031.4 Door signs. For the following buildings, signs shall be posted and maintained on exit stair doors in accordance with this section:

1. Buildings or portions thereof occupied by Group B or arranged to be occupied by more than 100 persons above or below the street level or more than 500 persons in the entire building.
2. High-rise buildings subject to Section 403.
3. Buildings where any stair side door is locked pursuant to Section 1010.1.9.11.

Exception: Signs shall not be required on exit stair doors opening directly to dwelling or sleeping units in occupancy Group R where permitted by Section 1016.3.

1031.4.1 Occupied side. Where reentry is not provided from a stair to every floor, a sign that reads, "NO REENTRY FROM THIS STAIR" shall be posted on the occupied side of the stair door at every floor.

1031.4.2 Stair side. On the stair side, signs shall be posted and maintained at all stair doors at every floor. Such signs shall be either:

1. Reentry. Where reentry is provided, a sign shall read, "REENTRY ON THIS FLOOR."
2. No Reentry. Where reentry is not provided on that floor, the sign shall read:
 - 2.1. "NO REENTRY"; where reentry is not provided on any floor;
 - 2.2. "NO REENTRY, NEAREST REENTRY ON THE . . . AND . . . FLOORS"; where reentry is provided on other floors; and
 - 2.3. "NO REENTRY. REENTRY IS PROVIDED ONLY DURING FIRE EMERGENCIES. NEAREST TELEPHONE ON THE . . . AND . . . FLOORS"; where stair side doors are locked in accordance with Section 403.5.3.

1031.4.3 Graphics. The lettering and numerals of the signs shall be at least 1/2 inch (12.7 mm) high of bold type. The lettering and background shall be contrasting colors and the signs shall be securely attached approximately 5

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feet (1524 mm) above the floor. The signs may be either independent or combined with floor and stairway identification signs.

1031.5 Wall signs, stair side. In high-rise buildings subject to Section 403, signs shall be posted and maintained on the wall as follows:

1. **Reentry.** Where a reentry door is recessed, a supplementary sign complying with Section 1031.4.3, except that the lettering and numerals shall be at least 1 inch (25.4 mm) high, shall be securely attached on the wall of the landing and shall be readily visible to the evacuee on the stairs indicating the location of such recessed reentry door.
2. **No reentry.** Where there is no reentry from the stair, an additional sign complying with Item 2 of Section 1031.4.2, and Section 1031.4.3, except that the lettering and numerals shall be at least 1 inch (25.4 mm) high, shall be securely attached at the beginning of the descent into such portion of the stair on the wall of the landing and shall be readily visible to the evacuee on the stairs.

1031.6 Accessible means of egress signs. Accessible means of egress shall be provided with signs in accordance with Section 1009.9.

1031.7 Capacity sign. Occupant load signs shall be provided in accordance with Section 1029.1.3.

1031.8 Access-controlled doors. Access-controlled doors shall be provided with signs in accordance with Section 1010.1.9.8.

1031.9 Delayed egress locks. Doors equipped with delayed egress shall be provided with signs in accordance with Section 1010.1.9.7.

1031.10 Signs in sleeping rooms. A sign shall be posted on the inside of every door opening onto a corridor giving access to a sleeping room in all Group R-1 occupancies. The sign shall contain a diagram showing the location where it is posted and the location and letter identification of the exit stairs on the floor. The diagram shall indicate the number of doors opening onto the public corridor which must be passed to reach each exit stair. The sign shall be at least 8 inches by 10 inches (203.2 mm by 254 mm), located on the inside of the door and securely attached. The top of such sign shall not be more than 6 feet (1828.8 mm) from the floor level. Such sign shall contain such additional information as the Fire Department may require.

1031.11 Luminous egress path markings. Luminous egress path markings in high-rise buildings subject to Section 403.5.5 shall be provided in accordance with Section 1025 and Appendix S.

1031.12 Materials for signs. Signs required by this section shall be of metal or other durable material.