

**1301:7-7-10 Means of egress.****(A) Section 1001 General**

**(1) 1001.1 General.** Buildings or portions thereof shall be provided with a means of egress system as required by this rule and in compliance with accessibility requirements as set forth in chapter 11 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. The provisions of this rule 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. Paragraphs (C)(1003) to (DD)(1030) of this rule shall apply to new construction. The new construction requirements of this rule for the means of egress in structures regulated by the building code as listed in rule 1301:7-7-80 of the Administrative Code submitted for plan review in accordance with this paragraph are subject to and do not supersede or otherwise conflict with the requirements of paragraph (D)(2)(a)(104.2.1) of rule 1301:7-7-01 of the Administrative Code. Paragraph (EE)(1031) of this rule shall apply to existing buildings. Except for maintenance requirements contained in paragraph (EE)(1031) of this rule, the provisions of this rule for a means of egress system in existing buildings shall apply only in accordance with paragraph (B)(1)(c)(102.1) of rule 1301:7-7-01 of the Administrative Code.

**(2) 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 capacity of the means of egress to less than required by this code.

**(B) Section 1002 Definitions**

**(1) [BE] 1002.1 Definitions.** The following terms are defined in rule 1301:7-7-02 of the Administrative Code.

**“Accessible means of egress.”**

**“Aisle.”**

**“Aisle accessway.”**

**“Alternating tread device.”**

**“Area of refuge.”**

**“Bleachers.”**

**“Breakout.”**

**“Common path of egress travel.”**

**“Corridor.”**

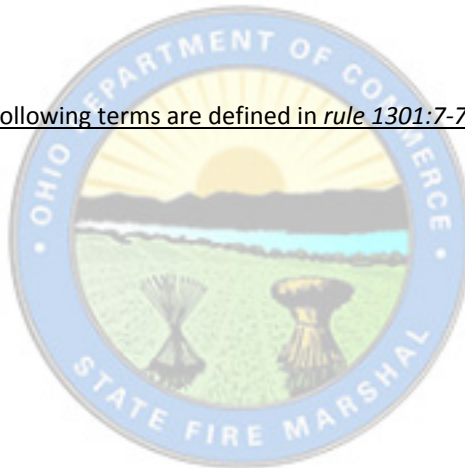
**“Door, balanced.”**

**“Egress court.”**

**“Emergency escape and rescue opening.”**

**“Exit.”**

**“Exit access.”**



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“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.”

“Open-ended corridor.”

“Panic hardware.”



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“Photoluminescent.”

“Power-assisted door.”

“Power-operated door.”

“Public way.”

“Ramp.”

“Scissor stairway.”

“Self-luminous.”

“Smoke-protected assembly seating.”

“Stair.”

“Stairway.”

“Stairway, interior.”

“Stairway, spiral.”

“Temporary door locking device.”

“Winder.”



**(C) [BE] Section 1003 General means of egress**

**(1) 1003.1 Applicability.** The general requirements specified in *paragraphs (C)(1003) to (O)(1015) of this rule* 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 rule.

**(2) [BE] 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.** Sloped ceilings in accordance with section 1208.2 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*
- 2.** Ceilings of dwelling units and sleeping units within residential occupancies in accordance with section 1208.2 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*
- 3.** Allowable projections in accordance with *paragraph (C)(3)(1003.3) of this rule.*
- 4.** Stair headroom in accordance with *paragraph (K)(3)(1011.3) of this rule.*
- 5.** Door height in accordance with *paragraph (J)(1)(a)(1010.1.1) of this rule.*
- 6.** Ramp headroom in accordance with *paragraph (L)(5)(b)(1012.5.2) of this rule.*

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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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

8. Areas above and below mezzanine floors in accordance with section 505.2 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

**(3) [BE] 1003.3 Protruding objects.** Protruding objects on circulation paths shall comply with the requirements of paragraphs (C)(3)(a)(1003.3.1) to (C)(3)(d)(1003.3.4) of this rule.

**(a) [BE] 1003.3.1 Headroom.** Protruding objects are permitted to extend below the minimum ceiling height required by paragraph (C)(2)(1003.2) of this rule where a minimum headroom of 80 inches (2032 mm) is provided over any walking surface, including walks, corridors, aisles and passageways. Not more than 50 per cent 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 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 (686 mm) maximum above the floor.

**(b) [BE] 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 (102 mm) where the lowest point of the leading edge is more than 27 inches (686 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 (305 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.

**(c) [BE] 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 (102 mm) into the circulation path.

**Exception:** Handrails are permitted to protrude 4½ inches (114 mm) from the wall.

**(d) [BE] 1003.3.4 Clear width.** Protruding objects shall not reduce the minimum clear width of accessible routes.

**(4) [BE] 1003.4 Floor surface.** Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached.

**(5) [BE] 1003.5 Elevation change.** Where changes in elevation of less than 12 inches (305 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-per cent slope), ramps complying with paragraph (K)(1012) of this rule shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

**Exceptions:**

1. A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2 and R-3 as applicable in paragraph (A)(1)(1001.1) of this rule, and Groups

S and U at exterior doors not required to be accessible by chapter 11 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

2. A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by chapter 11 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, where the risers and treads comply with *paragraph (K)(5)(1011.5) of this rule*, the minimum depth of the tread is 13 inches (330 mm) and not less than one handrail complying with *paragraph (N)(1014) of this rule* is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair.
3. A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be accessible by chapter 11 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, provided that the risers and treads comply with *paragraph (CC)(13)(1029.13) of this rule* and the aisle is provided with a handrail complying with *paragraph (CC)(15)(1029.15) of this rule.*

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.

**(6) [BE] 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 *rule*. Obstructions shall not be placed in the minimum width or required capacity of a means of egress component except projections permitted by this *rule*. The minimum width or required capacity of a means of egress system shall not be diminished along the path of egress travel.

**(7) [BE] 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.

**Exception:** Elevators used as an accessible means of egress in accordance with *paragraph (I)(4)(1009.4) of this rule.*

#### **(D) Section 1004 Occupant load**

**(1) [BE] 1004.1 Design occupant load.** In determining means of egress requirements, the number of occupants for whom means of egress facilities are provided shall be determined in accordance with this *paragraph*.

**(a) [BE] 1004.1.1 Cumulative occupant loads.** Where the path of egress travel includes intervening rooms, areas or spaces, cumulative occupant loads shall be determined in accordance with this *paragraph*.

**(i) [BE] 1004.1.1.1 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.

**(ii) [BE] 1004.1.1.2 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.

**(iii) [BE] 1004.1.1.3 Adjacent stories.** Other than for the egress components designed for convergence in accordance with *paragraph (E)(6)(1005.6) of this rule*, the occupant load from separate stories shall not be added.

(b) **[BE] 1004.1.2 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 1004.1.2 of this rule. 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 1004.1.2 of this rule. Where an intended function is not listed in Table 1004.1.2 of this rule, the fire code official shall establish a function based on a listed function that most nearly resembles the intended function.

**Exception:** Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.

**[BE] Table 1004.1.2**  
**Maximum floor area allowances per occupant**

| <u>Function of space</u>  | <u>Occupant load factor<sup>a</sup></u>           |
|---|---|
| <u>Accessory storage areas-mechanical equipment room</u>  | <u>300 gross</u>                                  |
| <u>Agricultural building</u>  | <u>300 gross</u>                                  |
| <u>Aircraft hangars</u>   | <u>500 gross</u>                                  |
| <u>Airport terminal</u>   |   |
| <u>Baggage claim</u>  | <u>20 gross</u>                                   |
| <u>Baggage handling</u>   | <u>300 gross</u>                                  |
| <u>Concourse</u>  | <u>100 gross</u>                                  |
| <u>Waiting areas</u>  | <u>15 gross</u>                                   |
| <u>Assembly</u>   |   |
| <u>Gaming floors (keno, slots, etc.)</u>  | <u>11 gross</u>                                   |
| <u>Exhibit gallery and museum</u>   | <u>30 net</u>                                     |
| <u>Assembly with fixed seats</u>  | <i>See paragraph (D)(4)( 1004.4) of this rule</i> |
| <u>Assembly without fixed seats</u>   |   |
| <u>Concentrated (chairs only-not fixed)</u>   | <u>7 net</u>                                      |
| <u>Standing space</u>   | <u>5 net</u>                                      |
| <u>Unconcentrated (tables and chairs)</u>   | <u>15 net</u>                                     |
| <u>Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas</u> | <u>7 net</u>                                      |
| <u>Business areas</u>   | <u>100 gross</u>                                  |
| <u>Courtrooms-other than fixed seating areas</u>  | <u>40 net</u>                                     |
| <u>Day care</u>   | <u>35 net</u>                                     |
| <u>Dormitories</u>  | <u>50 gross</u>                                   |
| <u>Educational</u>  |   |
| <u>Classroom area</u>   | <u>20 net</u>                                     |
| <u>Shops and other vocational room areas</u>  | <u>50 net</u>                                     |
| <u>Exercise rooms</u>   | <u>50 gross</u>                                   |
| <u>Group H-5 fabrication and manufacturing areas</u>  | <u>200 gross</u>                                  |
| <u>Industrial areas</u>   | <u>100 gross</u>                                  |
| <u>Institutional areas</u>  |   |
| <u>Inpatient treatment areas</u>  | <u>240 gross</u>                                  |
| <u>Outpatient areas</u>   | <u>100 gross</u>                                  |
| <u>Sleeping areas</u>   | <u>120 gross</u>                                  |
| <u>Kitchens, commercial</u>   | <u>200 gross</u>                                  |
| <u>Library</u>  |   |
| <u>Reading rooms</u>  | <u>50 net</u>                                     |
| <u>Stack area</u>   | <u>100 gross</u>                                  |
| <u>Locker rooms</u>   | <u>50 gross</u>                                   |

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| <u>Mall buildings-covered and open</u> | <u>See Section 402.8.2 of the building code as listed in rule 1301:7-7-80 of the Administrative Code</u> |
| <u>Mercantile</u>                      | <u>60 gross</u>  |
| <u>Storage, stock, shipping areas</u>  | <u>300 gross</u>   |
| <u>Parking garages</u>                 | <u>200 gross</u>   |
| <u>Residential</u>                     | <u>200 gross</u>   |
| <u>Skating rinks, swimming pools</u>   |  |
| <u>Rink and pool</u>                   | <u>50 gross</u>  |
| <u>Decks</u>                           | <u>15 gross</u>  |
| <u>Stages and platforms</u>            | <u>15 net</u>  |
| <u>Warehouses</u>                      | <u>500 gross</u>   |

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 foot = 304.8 mm.

a. Floor area in square feet per occupant.

(2) **[BE] 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 occupancies in Table 1004.1.2 of this rule provided that all other requirements of the code are met based on such modified number and the occupant load does not exceed one occupant per 7 square feet (0.65 m<sup>2</sup>) of occupiable floor space. Where required by the fire code official pursuant to paragraph (A)(1)(1001.1) of this rule, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the fire code official, such diagram shall be posted. At locations or in structures not regulated by the building code as listed in rule 1301:7-7-80 of the Administrative Code, the increased occupant load shall be approved by the fire code official.

(3) **[BE] 1004.3 Posting of occupant load.** Every room or space that is an assembly occupancy 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 and shall be maintained by the owner or the owner's authorized agent.

(4) **[BE] 1004.4 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 paragraph (D)(1)(b)(1004.1.2) of this rule 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

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 mm) of seating length.

The occupant load of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.

(5) **[BE] 1004.5 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 rule. The occupant load of such outdoor areas shall be assigned by the fire code official pursuant to paragraph (A)(1)(1001.1) of this rule in accordance with the anticipated use. 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. At locations or in structures not regulated by the building code as listed in rule 1301:7-7-80 of the Administrative Code, the occupant load shall be approved by the fire code official.

**Exceptions:**

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

(6) [BE] 1004.6 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.

**(E) Section 1005 Means of egress sizing**

(1) [BE] 1005.1 General. All portions of the means of egress system shall be sized in accordance with this paragraph.

Exception: Aisles and aisle accessways in rooms or spaces used for assembly purposes complying with paragraph (CC)(1029) of this rule.

(2) [BE] 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.

(3) [BE] 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 paragraphs (E)(3)(a)(1005.3.1) and (E)(3)(b)(1005.3.2) of this rule.

(a) [BE] 1005.3.1 Stairways. The capacity, in inches (mm), of the 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. 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. For other than Group H and I-2 occupancies, the capacity, in inches (mm), 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 0.2 inches (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code and an emergency voice/alarm communication system in accordance with paragraph (G)(5)(b)(ii)(907.5.2.2) of rule 1301:7-7-09 of the Administrative Code.
2. Facilities with smoke-protected assembly seating shall be permitted to use the capacity factors in Table 1029.6.2 of this rule 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 paragraph (I)(909) of rule 1301:7-7-09 of the Administrative Code.
3. Facilities with outdoor smoke-protected assembly seating shall be permitted to the capacity factors in paragraph (CC)(6)(c)(1029.6.3) of this rule 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.

(b) [BE] 1005.3.2 Other egress components. The capacity, in inches (mm), 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. For other than Group H and I-2 occupancies, the capacity, in inches (mm), 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 0.15 inches (3.8 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code* and an emergency voice/alarm communication system in accordance with *paragraph (G)(5)(b)(ii)(907.5.2.2) of rule 1301:7-7-09 of the Administrative Code.*
2. Facilities with smoke-protected assembly seating shall be permitted to use the capacity factors in Table 1029.6.2 of this rule 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 *paragraph (I)(909) of rule 1301:7-7-09 of the Administrative Code.*
3. Facilities with outdoor smoke-protected assembly seating shall be permitted to the capacity factors in *paragraph (CC)(6)(c)(1029.6.3) of this rule* 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.

(4) [BE] 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.

(5) [BE] 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 per cent of the required capacity or width.

(6) [BE] 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.

(7) [BE] 1005.7 Encroachment. Encroachments into the required means of egress width shall be in accordance with the provisions of this *paragraph.*

(a) [BE] 1005.7.1 Doors. Doors, when fully opened, shall not reduce the required width by more than 7 inches (178 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 maximum (178 mm) encroachment where both of the following conditions exists:
  - 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 (1219 mm) above the finished floor.

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2. The restrictions on door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 occupancies and dwelling units of Group R-3 occupancies.

**(b) [BE] 1005.7.2 Other projections.** Handrail projections shall be in accordance with the provisions of paragraph (N)(8)(1014.8) of this rule. 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 mm) on each side.

**Exception:** Projections are permitted in corridors within Group I-2 Condition 1 in accordance with Section 407.4.3 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

**(c) [BE] 1005.7.3 Protruding objects.** Protruding objects shall comply with the applicable requirements of paragraph (C)(3)(1003.3) of this rule.

**(F) Section 1006 Numbers of exits and exit access doorways**

**(1) [BE] 1006.1 General.** The number of exits or exit access doorways required within the means of egress system shall comply with the provisions of paragraph (F)(2)(1006.2) of this rule for spaces, including mezzanines, and paragraph (F)(3)(1006.3) of this rule for stories.

**(2) [BE] 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 paragraph.

**(a) [BE] 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 of this rule.

**Exceptions:**

- In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code and the common path of egress travel does not exceed 125 feet (38 100 mm).
- Care suites in Group I-2 occupancies complying with section 407.4 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

**[BE] 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 <sup>c</sup> , E, M       | 49                             | 75   | 75      | 75 <sup>a</sup>              |
| B                           | 49                             | 100  | 75      | 100 <sup>a</sup>             |
| F                           | 49                             | 75   | 75      | 100 <sup>a</sup>             |
| H-1, H-2, H-3               | 3                              | NP   | NP      | 25 <sup>b</sup>              |
| H-4, H-5                    | 10                             | NP   | NP      | 75 <sup>b</sup>              |
| I-1, I-2 <sup>d</sup> , I-4 | 10                             | NP   | NP      | 75 <sup>a</sup>              |
| I-3                         | 10                             | NP   | NP      | 100 <sup>a</sup>             |
| R-1                         | 10                             | NP   | NP      | 75 <sup>a</sup>              |

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|                          |           |            |           |                        |
|--------------------------|-----------|------------|-----------|------------------------|
| <u>R-2</u>               | <u>10</u> | <u>NP</u>  | <u>NP</u> | <u>125<sup>a</sup></u> |
| <u>R-3<sup>e,g</sup></u> | <u>10</u> | <u>NP</u>  | <u>NP</u> | <u>125<sup>a</sup></u> |
| <u>R-4<sup>e,g</sup></u> | <u>10</u> | <u>75</u>  | <u>75</u> | <u>125<sup>a</sup></u> |
| <u>S<sup>f</sup></u>     | <u>29</u> | <u>100</u> | <u>75</u> | <u>100<sup>a</sup></u> |
| <u>U</u>                 | <u>49</u> | <u>100</u> | <u>75</u> | <u>75<sup>a</sup></u>  |

For SI: 1 foot = 304.8 mm.

NP=Not Permitted.

- a. Buildings equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code. See paragraph (C)(903) of rule 1301:7-7-09 of the Administrative Code for occupancies where automatic sprinkler systems are permitted in accordance with paragraph (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code.
- b. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(2)(e)(903.2.5) of rule 1301:7-7-09 of the Administrative Code.
- c. For a room or space used for assembly purposes having fixed seating, see paragraph (CC)(8)(1029.8) of this rule.
- d. For the travel distance limitations in Group I-2, see section 407.4 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.
- e. The length of common path of egress travel distance in a Group R-3 occupancy located in a mixed occupancy building or within a Group R-3 or R-4 congregate living facility.
- f. The length of common path of egress travel distance in a Group S-2 open parking garage shall be not more than 100 feet.
- g. For the travel distance limitations in Group R-3 and R-4 equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(iii)(903.3.1.3) of rule 1301:7-7-09 of the Administrative Code, see paragraph (F)(2)(b)(vi)(1006.2.2.6) of this rule.

(i) [BE] 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.

(b) [BE] 1006.2.2 Egress based on use. The numbers of exits or access to exits shall be provided in the uses described in paragraphs (F)(2)(b)(i)(1006.2.2.1) to (F)(2)(b)(v)(1006.2.2.5) of this rule.

(i) [BE] 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 m<sup>2</sup>) 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 is permitted to be 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.

(ii) [BE] 1006.2.2.2 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m<sup>2</sup>) shall have not less than two exits or exit access doorways. 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 paragraph (Q)(1)(1017.1) of this rule.

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

(iii) [BE] 1006.2.2.3 Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (93 m<sup>2</sup>), 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 paragraph (Q)(1)(1017.1) of this rule, 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.

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**Exception:** Where using refrigerants in quantities limited to the amounts based on the volume set forth in the mechanical code as listed in rule 1301:7-7-80 of the Administrative Code.

(iv) **[BE] 1006.2.2.4 Day care means of egress.** Day care facilities, rooms or spaces where care is provided for more than 10 children that are 2 ½ years of age or less, shall have access to not less than two exits or exit access doorways.

(v) **[BE] 1006.2.2.5 Vehicular ramps.** Vehicular ramps shall not be considered as an exit access ramp unless pedestrian facilities are provided.

(3) **[BE] 1006.3 Egress from stories or occupied roofs.** The means of egress system serving any story or occupied roof shall be provided with the number of exits or access to exits based on the aggregate occupant load served in accordance with this *paragraph*. The path of egress travel to an exit shall not pass through more than one adjacent story.

(a) **[BE] 1006.3.1 Egress based on occupant load.** Each story and occupied roof shall have the minimum number of independent exits, or access to exits, as specified in Table 1006.3.1 of this rule. A single exit or access to a single exit shall be permitted in accordance with *paragraph (F)(3)(b)(1006.3.2) of this rule*. The required number of exits, or exit access stairways or ramps providing access to exits, from any story or occupied roof shall be maintained until arrival at the exit discharge or a public way.

**[BE] Table 1006.3.1**  
**Minimum number of exits or access to exits per story**

| <b>Occupant load per story</b> | <b>Minimum number of exits or access to exits from story</b> |
|--------------------------------|--|
| 1-500                          | 2  |
| 501-1,000                      | 3  |
| More than 1,000                | 4  |

(b) **[BE] 1006.3.2 Single exits.** A single exit or access to a single exit shall be permitted from any story or occupied roof, 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(1) or 1006.3.2(2) of this rule.
2. Rooms, areas and spaces complying with *paragraph (F)(2)(a)(1006.2.1) of this rule* 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. Parking garages where vehicles are mechanically parked shall be permitted to have one exit or access to a single exit.
4. Group R-3 and R-4 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 *paragraph (F)(2)(a)(1006.2.1) of this rule* as a space with one means of egress.

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- 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.

**[BE] Table 1006.3.2(1)**

**Stories with one exit or access to one exit for R-2 occupancies**

| <u>Story</u>  | <u>Occupancy</u>         | <u>Maximum number of dwelling units</u> | <u>Maximum common path of egress travel distance</u> |
|---|--------------------------|---|--|
| <u>Basement, first, second or third story above grade plane</u> | <u>R-2<sup>a,b</sup></u> | <u>4 dwelling units</u>                 | <u>125 feet</u>                                      |
| <u>Fourth story above grade plane and higher</u>                | <u>NP</u>                | <u>NA</u>                               | <u>NA</u>  |

For SI: 1 foot = 3048 mm.

NP=Not Permitted.

NA=Not Applicable

- a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code and provided with emergency escape and rescue openings in accordance with paragraph (DD)(1030) of this rule.
- b. This Table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1006.3.2(2) of this rule.

**[BE] Table 1006.3.2(2)**

**Stories with one exit or access to one exit for other occupancies**

| <u>Story</u>                                    | <u>Occupancy</u>                                | <u>Maximum occupant load per story</u> | <u>Maximum common path of egress travel distance (feet)</u> |
|---|---|--|---|
| <u>First story above or below grade plane</u>   | <u>A, B<sup>b</sup>, E, F<sup>b</sup>, M, U</u> | <u>49</u>                              | <u>75</u>   |
|   | <u>H-2, H-3</u>                                 | <u>3</u>                               | <u>25</u>   |
|   | <u>H-4, H-5, I, R-1, R-2<sup>a,c</sup>, R-4</u> | <u>10</u>                              | <u>75</u>   |
|   | <u>S<sup>b,d</sup></u>                          | <u>29</u>                              | <u>75</u>   |
| <u>Second story above grade plane</u>           | <u>B, F, M, S<sup>d</sup></u>                   | <u>29</u>                              | <u>75</u>   |
| <u>Third story above grade plane and higher</u> | <u>NP</u>                                       | <u>NA</u>                              | <u>NA</u>   |

For SI: 1 foot=304.8 mm.

NP=Not Permitted.

NA=Not Applicable.

- a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code and provided with emergency escape and rescue openings in accordance with paragraph (DD)(1030) of this rule.
- b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code shall have a maximum exit access travel distance of 100 feet.
- c. This table is used for R-2 occupancies consisting of sleeping units. For R-2 occupancies consisting of dwelling units, use Table 1006.3.2(1) of this rule.
- d. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet.

(i) [BE] 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(1) or 1006.3.2(2) of this rule for that occupancy.

Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of paragraph (D)(1)(1004.1) of this rule. 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(2) of this rule 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.

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**(G) Section 1007 Exit and exit access doorway configuration**

**(1) [BE] 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 *paragraph*.

**(a) [BE] 1007.1.1 Two exit 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. Interlocking or scissor stairways shall be counted as one exit stairway.

**Exceptions:**

1. Where interior exit stairways or ramps are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of *paragraph (T)(1020) of this rule*, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code*, the separation distance shall be not less than one-third of the length of the maximum overall diagonal dimension of the area served.

**(i) [BE] 1007.1.1.1 Measurement point.** The separation distance required in *paragraph (G)(1)(a)(1007.1.1) of this rule* shall be measured in accordance with the following:

- (a) The separation distance to exit or exit access doorways shall be measured to any point along the width of the doorway.
- (b) The separation distance to exit access stairways shall be measured to the closest riser.
- (c) The separation distance to exit access ramps shall be measured to the start of the ramp run.

**(b) [BE] 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 *paragraph (G)(a)(i)(1007.1.1) of this rule*. 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.

**(c) [BE] 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.

**(i) [BE] 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 *paragraph (B)(1)(c)(1007.1.3) of this rule*.

**(H) [BE] Section 1008 Means of egress illumination**

**(1) [BE] 1008.1 Means of egress illumination.** Illumination shall be provided in the means of egress in accordance with *paragraph (BB)(2)(1008.2) of this rule*. Under emergency power, means of egress illumination shall comply with *paragraph (H)(3)(1008.3) of this rule*.

**(2) [BE] 1008.2 Illumination required.** The means of egress serving a room or space shall be illuminated at all times that the room or space is occupied.

**Exceptions:**

1. Occupancies in Group U.
2. Aisle accessways in Group A.
3. Dwelling units and sleeping units in Groups R-1, R-2 and R-3.
4. Sleeping units of Group I occupancies.

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

**Exception:** For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances by one of the following methods provided that the required illumination is automatically restored upon activation of a premises' fire alarm system:

1. Externally illuminated walking surfaces shall be permitted to be illuminated to not less than 0.2 footcandle (2.15 lux).
2. Steps, landings and the sides of ramps shall be permitted to be marked with self-luminous materials in accordance with paragraphs (Y)(2)(a)(1025.2.1), (Y)(2)(b)(1025.2.2) and (Y)(2)(d)(1025.2.4) of this rule by systems listed in accordance with UL 1994 as listed in rule 1301:7-7-80 of the Administrative Code.

**(b) [BE] 1008.2.2 Exit discharge.** In Group I-2 occupancies where two or more exits are required, on the exterior landings required by paragraph (J)(6)(a)(1010.6.1) of this rule, 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 at the landing to less than 1 footcandle (11 lux).

**(3) [BE] 1008.3 Emergency power for illumination.** The power supply for means of egress illumination shall normally be provided by the premises' electrical supply.

**(a) [BE] 1008.3.1 General.** 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:

- (i) Aisles.
- (ii) Corridors.
- (iii) Exit access stairways and ramps.

**(b) [BE] 1008.3.2 Buildings.** 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:

- (i) Interior exit access stairways and ramps.
- (ii) Interior and exterior exit stairways and ramps.
- (iii) Exit passageways.

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(iv) Vestibules and areas on the level of discharge used for exit discharge in accordance with *paragraph (BB)(1)(1028.1) of this rule.*

(v) Exterior landings as required by *paragraph (J)(1)(f)(1010.1.6) of this rule* for exit doorways that lead directly to the exit discharge.

(c) **[BE] 1008.3.3 Rooms and spaces.** In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

(i) Electrical equipment rooms.

(ii) Fire command centers.

(iii) Fire pump rooms.

(iv) Generator rooms.

(v) Public restrooms with an area greater than 300 square feet (27.87 m<sup>2</sup>).

(d) **[BE] 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 *paragraph (D)(604) of rule 1301:7-7-06 of the Administrative Code.*

(e) **[BE] 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 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).

**(l) [BE] Section 1009 Accessible means of egress**

**(1) [BE] 1009.1 Accessible means of egress required.** Accessible means of egress shall comply with this *paragraph.* Accessible spaces shall be provided with not less than one accessible means of egress. Where more than one means of egress is required by *paragraphs (F)(2)(1006.2) or (F)(2)(1006.3) of this rule* 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 to be provided in existing buildings.
2. One accessible means of egress is required from an accessible mezzanine level in accordance with *paragraph (I)(3)(1009.3), (I)(4)(1009.4) or (I)(5)(1009.5) of this rule.*
3. In assembly areas with ramped aisles or stepped aisles, one accessible means of egress is permitted where the common path of travel is accessible and meets the requirements in *paragraph (CC)(8)(1029.8) of this rule.*

**(2) [BE] 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:

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1. Accessible routes complying with section 1104 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*
2. Interior exit stairways complying with *paragraphs (I)(3)(1009.3) and (W)(1023) of this rule.*
3. Exit access stairways complying with *paragraphs (G)(3)(1009.3) and (S)(3)(1019.3) or (S)(3)(1019.4) of this rule.*
4. Exterior exit stairways complying with *paragraphs (I)(3)(1009.3) and (AA)(1027) of this rule and serving levels other than the level of exit discharge.*
5. Elevators complying with *paragraph (I)(4)(1009.4) of this rule.*
6. Platform lifts complying with *paragraph (I)(5)(1009.5) of this rule.*
7. Horizontal exits complying with *paragraph (Z)(1026) of this rule.*
8. Ramps complying with *paragraph (L)(1012) of this rule.*
9. Areas of refuge complying with *paragraph (I)(6)(1009.6) of this rule.*
10. Exterior areas for assisted rescue complying with *paragraph (I)(7)(1009.7) of this rule serving exits at the level of exit discharge.*

**(a) [BE] 1009.2.1 Elevators required.** In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, not less than one required accessible means of egress shall be an elevator complying with *paragraph (I)(4)(1009.4) of this rule.*

**Exceptions:**

1. In buildings equipped throughout with an automatic sprinkler system installed in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code,* the elevator shall not be required on floors provided with a horizontal exit and located at or above the levels of exit discharge.
2. In buildings equipped throughout with an automatic sprinkler system installed in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code,* the elevator shall not be required on floors provided with a ramp conforming to the provisions of *paragraph (L)(1012) of this rule.*

**(3) [BE] 1009.3 Stairways.** In order to be considered part of an accessible means of egress, a stairway between stories shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with *paragraph (I)(6)(1009.6) of this rule.* Exit access stairways that connect levels in the same story are not permitted as part of an accessible means of egress.

**Exceptions:**

1. Exit access stairways providing means of egress from mezzanines are permitted as part of an accessible means of egress.

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2. The clear width of 48 inches (1219 mm) between handrails is not required in buildings equipped throughout with an automatic sprinkler system installed in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code.
3. The clear width of 48 inches (1219 mm) between handrails is not required for stairways accessed from a refuge area in conjunction with a horizontal exit.
4. Areas of refuge are not required at exit access stairways where a two-way communication is provided at the elevator landing in accordance with paragraph (I)(8)(1009.8) of this rule.
5. Areas of refuge are not required at stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code.
6. Areas of refuge are not required at stairways serving open parking garages.
7. Areas of refuge are not required for smoke protected assembly seating areas complying with paragraph (CC)(6)(b)(1029.6.2) of this rule.
8. Areas of refuge are not required at stairways in Group R-2 occupancies.
9. Areas of refuge are not required for stairways accessed from a refuge area in conjunction with a horizontal exit.

**(4) [BE] 1009.4 Elevators.** In order 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/CSA B44 as listed in rule 1301:7-7-80 of the Administrative Code. Standby power shall be provided in accordance with paragraph (D)(604) of rule 1301:7-7-06 of the Administrative Code and section 3003 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. The elevator shall be accessed from an area of refuge complying with paragraph (I)(6)(1009.6) of this rule.

**Exceptions:**

1. Areas of refuge are not required at the elevator in open parking garages.
2. Areas of refuge are not required in buildings and facilities equipped throughout with an automatic sprinkler system installed in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code.
3. Areas of refuge are not required at elevators not required to be located in a shaft in accordance with section 712 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.
4. Areas of refuge are not required at elevators serving smoke protected seating areas complying with paragraph (CC)(6)(b)(1029.6.2) of this rule.
5. Areas of refuge are not required for elevators accessed from a refuge area in conjunction with a horizontal exit.

**(5) [BE] 1009.5 Platform lifts.** Platform 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code except for Item 10. Standby power for the platform lift shall be provided in accordance with paragraph (D)(604) of rule 1301:7-7-06 of the Administrative Code.

(6) [BE] 1009.6 Areas of refuge. Every required area of refuge shall be accessible from the space it serves by an accessible means of egress.

(a) [BE] 1009.6.1 Travel distance. The maximum travel distance from any accessible space to an area of refuge shall not exceed the exit access travel distance permitted for the occupancy in accordance with paragraph (Q)(1)(1017.1) of this rule.

(b) [BE] 1009.6.2 Stairway or elevator access. Every required area of refuge shall have direct access to a stairway complying with paragraphs (I)(3)(1009.3) and (W)(1023) of this rule or an elevator complying with paragraph (I)(4)(1009.4) of this rule.

(c) [BE] 1009.6.3 Size. Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 48 inches (762 mm by 1219 mm) for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge. 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 refuge shall not be obstructed by more than one adjoining wheelchair space.

(d) [BE] 1009.6.4 Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with section 709 of the building code as listed in rule 1301:7-7-80 of the Administrative Code or a horizontal exit complying with paragraph (Z)(1026) of this rule. Each area of refuge shall be designed to minimize the intrusion of smoke.

**Exceptions:**

1. Areas of refuge located within an enclosure for interior exit stairways complying with paragraph (W)(1023) of this rule.
2. Areas of refuge in outdoor facilities where exit access is essentially open to the outside.

(e) [BE] 1009.6.5 Two-way communication. Areas of refuge shall be provided with a two-way communication system complying with paragraphs (I)(8)(a)(1009.8.1) and (I)(8)(b)(1009.8.2) of this rule.

(i) 1009.6.5.1 Testing and maintenance. All two-way communication systems shall be tested in the presence of the fire code official upon completion of installation. Communication systems shall be inspected and tested in accordance with NFPA 72 as listed in rule 1301:7-7-80 of the Administrative Code to verify that all components are operational.

(7) [BE] 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 paragraphs (I)(7)(a)(1009.7.1) to (I)(7)(d)(1009.7.4) of this rule.

(a) [BE] 1009.7.1 Size. Each exterior area for assisted rescue shall be sized to accommodate wheelchair spaces in accordance with paragraph (I)(6)(a)(1009.6.3) of this rule.

(b) [BE] 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 (1219 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

(c) [BE] 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 per cent open, and the open area shall be so distributed as to minimize the accumulation of smoke or toxic gases.

(d) [BE] 1009.7.4 Stairways. Stairways that are part of the 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 *paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code.*

(8) [BE] 1009.8 Two-way communication. A two-way communication system complying with *paragraphs (l)(8)(a)(1009.8.1) and (l)(8)(b)(1009.8.2) of this rule* 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 refuge in accordance with *paragraph (l)(6)(e)(1009.6.5) of this rule.*
2. Two-way communication systems are not required on floors provided with ramps conforming to the provisions of *paragraph (L)(1012) of this rule.*
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.
5. Two-way communication systems are not required at the landing serving a private residence elevator.

(a) [BE] 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 constantly attended, a two-way communication system shall have a timed automatic telephone dial-out capability to a monitoring location or 9-1-1. The two-way communication system shall include both audible and visible signals.

(b) [BE] 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 as listed in *rule 1301:7-7-80 of the Administrative Code* requirements for visual characters.

(9) [BE] 1009.9 Signage. Signage indicating special accessibility provisions shall be provided as shown:

(a) Each door providing access to an area of refuge from an adjacent floor area shall be identified by a sign stating: "AREA OF REFUGE."

- (b) 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 as listed in rule 1301:7-7-80 of the Administrative Code requirements for visual characters and include the "International Symbol of Accessibility." Where exit sign illumination is required by paragraph (M)(3)(1013.3) of this rule, the signs shall be illuminated. Additionally, visual characters, raised character and Braille signage complying with ICC A117.1 as listed in rule 1301:7-7-80 of the Administrative Code shall be located at each door to an area of refuge and exterior area for assisted rescue in accordance with paragraph (M)(4)(1013.4) of this rule.

(10) [BE] 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:

- (a) At exits serving a required accessible space but not providing an approved accessible means of egress.
- (b) At elevator landings.
- (c) Within areas of refuge.

(11) [BE] 1009.11 Instructions. In areas of refuge 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 as listed in rule 1301:7-7-80 of the Administrative Code requirements for visual characters. The instructions shall include all of the following:

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

(J) [BE] Section 1010 Doors, gates and turnstiles

(1) [BE] 1010.1 Doors. Means of egress doors shall meet the requirements of this *paragraph*. Doors serving a means of egress system shall meet the requirements of this *paragraph* and *paragraph (V)(2)(1022.2) of this rule*. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this *paragraph*.

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.

- (a) [BE] 1010.1.1 Size of doors. 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 (813 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 *paragraph* requires a minimum clear width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 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 41½ inches (1054 mm). The height of door openings shall not be less than 80 inches (2032 mm).

**Exceptions:**

*Note: for copyright claim information, please see the notice on the last page of this rule.*

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 mm).
3. Door openings to *reach in* storage closets less than 10 square feet (0.93 m<sup>2</sup>) in area shall not be limited by the minimum width.
4. Width of door leaves in revolving doors that comply with *paragraph (J)(1)(d)(i)(1010.1.4.1) of this rule* shall not be limited.
5. Door openings within a dwelling unit or sleeping unit shall be not less than 78 inches (1981 mm) in height.
6. Exterior door openings in dwelling units and sleeping units, other than the required exit door, shall be not less than 76 inches (1930 mm) in height.
7. 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 A unit or Type B unit.
8. Door openings required to be accessible within Type B units shall have a minimum clear width of 31.75 inches (806 mm).
9. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m<sup>2</sup>) in area shall have a maximum width of 60 inches (1524 mm).
10. 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.

**(i) [BE] 1010.1.1.1 Projections into clear width.** There shall not be projections into the required clear width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).

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

**(b) [BE] 1010.1.2 Door swing.** 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 *paragraph (J)(1)(d)(i)(1010.1.4.1) of this rule*.

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6. In other than Group H occupancies, special purpose horizontal sliding, accordion or folding door assemblies complying with *paragraph (J)(1)(d)(iii)(1010.1.4.3) of this rule.*
7. Power-operated doors in accordance with *paragraph (J)(1)(d)(ii)(1010.1.4.2) of this rule.*
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.

(i) [BE] 1010.1.2.1 Direction of swing. Pivot or side-hinged swinging doors shall swing in the direction of egress travel where serving a room or area containing an occupant load of 50 or more persons or a Group H occupancy.

(c) [BE] 1010.1.3 Door opening force. *Doors required to be accessible shall comply with accessibility requirements as set forth in chapter 11 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. Doors not required to be accessible or for which accessibility requirements as set forth in chapter 11 of the building code as listed in rule 1301:7-7-80 of the Administrative Code has no requirements, shall comply with the following:* The force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5 pounds (22 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 (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force.

(i) [BE] 1010.1.3.1 Location of applied forces. Forces shall be applied to the latch side of the door.

(d) [BE] 1010.1.4 Special doors. Special doors and security grilles shall comply with the requirements of *paragraphs (J)(1)(d)(i)(1010.1.4.1) to (J)(1)(d)(iv)(1010.1.4.4) of this rule.*

(i) 1010.1.4.1 Revolving doors. Revolving doors shall comply with the following:

1. Revolving doors shall comply with BHMA A156.27 as listed in rule 1301:7-7-80 of the Administrative Code 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 as listed in rule 1301:7-7-80 of the Administrative Code and shall provide an aggregate width of not less than 36 inches (914 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 as listed in rule 1301:7-7-80 of the Administrative Code. Manual revolving doors shall comply with Table 1010.1.4.1(1) of this rule. Automatic or power-operated revolving doors shall comply with Table 1010.1.4.1(2) of this rule.
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 (610 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 mm) in diameter and shall be red.

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- 6. Each revolving door shall have a side-hinged swinging door that complies with *paragraph (J)(1)(1010.1) of this rule* 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 *paragraph (I)(1009) of this rule* and chapter 11 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*.

**[BE] Table 1010.1.4.1(1)**  
**Maximum door speed manual revolving doors**

| <b>Revolving door maximum nominal diameter (FT-IN)</b> | <b>Maximum allowable revolving door speed (RPM)</b> |
|--|---|
| <u>6-0</u>   | <u>12</u>   |
| <u>7-0</u>   | <u>11</u>   |
| <u>8-0</u>   | <u>10</u>   |
| <u>9-0</u>   | <u>9</u>  |
| <u>10-0</u>  | <u>8</u>  |

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

**[BE] Table 1010.1.4(2)**  
**Maximum door speed automatic or power-operated revolving doors**

| <b>Revolving door maximum nominal diameter (FT-IN)</b> | <b>Maximum allowable revolving door speed (RPM)</b> |
|--|---|
| <u>8-0</u>   | <u>7.2</u>  |
| <u>9-0</u>   | <u>6.4</u>  |
| <u>10-0</u>  | <u>5.7</u>  |
| <u>11-0</u>  | <u>5.2</u>  |
| <u>12-0</u>  | <u>4.8</u>  |
| <u>12-6</u>  | <u>4.6</u>  |
| <u>14-0</u>  | <u>4.1</u>  |
| <u>16-0</u>  | <u>3.6</u>  |
| <u>17-0</u>  | <u>3.4</u>  |
| <u>18-0</u>  | <u>3.2</u>  |
| <u>20-0</u>  | <u>2.9</u>  |
| <u>24-0</u>  | <u>2.4</u>  |

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

**(a) [BE] 1010.1.4.1.1 Egress component.** A revolving door used as a component of a means of egress shall comply with *paragraph (J)(1)(d)(i)(1010.1.4.1) of this rule* and the following three conditions:

- (i) Revolving doors shall not be given credit for more than 50 per cent of the minimum width or required capacity.
- (ii) Each revolving door shall be credited with a capacity based on not more than a 50-person occupant load.
- (iii) Each revolving door shall provide for egress in accordance with BHMA A156.27 as listed in rule 1301:7-7-80 of the Administrative Code with a breakout force of not more than 130 pounds (578 N).

**(b) [BE] 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 *paragraph (J)(1)(d)(a)(1010.1.4.1) of this rule*. The breakout force of a revolving door not used as a component of a means of egress shall not be more than 180 pounds (801 N).

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**Exception:** A breakout force in excess of 180 pounds (801 N) is permitted if the collapsing force is reduced to not more than 130 pounds (578 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 *paragraph (G)(907) of rule 1301:7-7-09 of the Administrative Code* 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 N).

(ii) **[BE] 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 *paragraph (J)(1)(c)(1010.1.3) of this rule*, except that the force to set the door in motion shall not exceed 50 pounds (220 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 as listed in *rule 1301:7-7-80 of the Administrative Code*. Power-assisted swinging doors and low-energy power-operated swinging doors shall comply with BHMA A156.19 as listed in *rule 1301:7-7-80 of the Administrative Code*.

**Exceptions:**

1. Occupancies in Group I-3.
2. Horizontal sliding doors complying with *paragraph (J)(1)(d)(iii)(1010.1.4.3) of this rule*.
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 (813 mm) single-leaf requirement of *paragraph (J)(1)(a)(1010.1.1) of this rule*, provided a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

(iii) **[BE] 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 *paragraph (J)(1)(b)(1010.1.2) of this rule* shall comply with all of the following criteria:

- (a) The doors shall be power operated and shall be capable of being operated manually in the event of power failure.
- (b) The doors shall be operable by a simple method from both sides without special knowledge or effort.
- (c) The force required to operate the door shall not exceed 30 pounds (133 N) to set the door in motion and 15 pounds (67 N) to close the door or open it to the minimum required width.
- (d) The door shall be operable with a force not to exceed 15 pounds (67 N) when a force of 250 pounds (1100 N) is applied perpendicular to the door adjacent to the operating device.

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(e) The door assembly shall comply with the applicable fire protection rating and, where rated, shall be self-closing or automatic closing by smoke detection, in accordance with section 716.5.9.3 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, shall be installed in accordance with NFPA 80 as listed in rule 1301:7-7-80 of the Administrative Code and shall comply with section 716 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

(f) The door assembly shall have an integrated standby power supply.

(g) The door assembly power supply shall be electrically supervised.

(h) The door shall open to the minimum required width within 10 seconds after activation of the operating device.

(iv) [BE] 1010.1.4.4 Security grilles. In Groups B, F, M and S, horizontal sliding or vertical security grilles are permitted at the main exit and shall be openable from the inside without the use of a key or special knowledge or effort during periods that the space is occupied. The grilles shall remain secured in the full-open position during the period of occupancy by the general public. 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.

(e) 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 one unit vertical in fifty units horizontal (2 per cent 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, 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 paragraph (C)(5)(1003.5) of this rule exception 1, and paragraph (V)(2)(1022.2) of this rule, which are not on an accessible route.

3. In Group R-3 occupancies not required to be Accessible units, Type A units or Type B units, the landing at an exterior doorway shall be not more than 7¼ inches (197 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. In units not required to be Type A, Type B or accessible, variations in elevation due to differences in finish materials, but not more than ½ inch (12.7 mm).

5. Exterior decks, patios or balconies that are part of Type B dwelling units, have impervious surfaces and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit.

6. Doors serving equipment spaces not required to be accessible in accordance with section 1103.2.9 of the building code as listed in rule 1301:7-7-80 of the Administrative Code 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 (178 mm) above or below the landing on the egress side of the door.

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**(f) [BE] 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 (178 mm). Where a landing serves an occupant load of 50 or more, doors in any position shall not reduce the landing to less than one-half its required width. Landings shall have a length measured in the direction of travel of not less than 44 inches (1118 mm).

**Exception:** 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 mm) when the units are not required to be accessible or Type A units.

**(g) [BE] 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-per cent 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 (197 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.
  - 1.3. The door is not part of an accessible unit, Type A unit or Type B unit.
2. In Type B units, where Exception 5 to paragraph (J)(1)(e)(1010.1.5) of this rule permits a 4-inch (102 mm) elevation change at the door, the threshold height on the exterior side of the door shall not exceed  $4\frac{3}{4}$  inches (120 mm) in height above the exterior deck, patio or balcony for sliding doors or  $4\frac{1}{2}$  inches (114 mm) above the exterior deck, patio or balcony for other doors.

**(h) [BE] 1010.1.8 Door arrangement.** Space between two doors in a series shall be 48 inches (1219 mm) minimum plus the width of a door swinging into the space. Doors in a 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 (1219 mm).
2. Storm and screen doors serving individual dwelling units in Groups R-2 and R-3 need not be spaced 48 inches (1219 mm) from the other door.
3. Doors within individual dwelling units in Groups R-2 and R-3 other than within Type A dwelling units.

**(i) [BE] 1010.1.9 Door operations.** Except as specifically permitted by this paragraph egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

**Exception:** A temporary door locking device that is approved by the building official and noted on the certificate of occupancy in accordance with section 1010.4 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, and that is used in accordance with section 1010.4.1 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

(i) **[BE] 1010.1.9.1 Hardware.** Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11 of the building code as listed in rule 1301:7-7-80 of the Administrative Code shall not require tight grasping, tight pinching or twisting of the wrist to operate.

*Exception: A temporary door locking device that is approved by the building official and noted on the certificate of occupancy in accordance with section 1010.4 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, and that is used in accordance with section 1010.4.1 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.*

(ii) **[BE] 1010.1.9.2 Hardware height.** Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 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 of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.*

(iii) **[BE] 1010.1.9.3 Locks and latches.** Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

(a) Places of detention or restraint.

(b) In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

(i) The locking device is readily distinguishable as locked.

(ii) A readily visible durable sign is posted on the egress side on or adjacent to the door stating: "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED." The sign shall be in letters 1 inch (25 mm) high on a contrasting background.

(iii) The use of the key-operated locking device is revocable by the fire code official for due cause.

(c) Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware.

(d) 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.

(e) Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

*(f) A temporary door locking device that is approved by the building official and noted on the certificate of occupancy in accordance with section 1010.4 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, and that is used in accordance with section 1010.4.1 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.*

(iv) **[BE] 1010.1.9.4 Bolt locks.** Manually operated flush bolts or surface bolts are not permitted.

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**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 50 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 *paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code*. 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.

(v) **[BE] 1010.1.9.5 Unlatching.** The unlatching of any door or leaf shall not require more than one operation.

**Exceptions:**

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by *paragraph (J)(1)(i)(iv)(1010.1.9.4) of this rule*.
3. Doors with automatic flush bolts as permitted by *paragraph (J)(1)(i)(iii)(1010.1.9.3), item 3 of this rule*.
4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by *paragraph (J)(1)(i)(iii)(1010.1.9.3), item 4 of this rule*.
5. A temporary door locking device that is approved by the building official and noted on the certificate of occupancy in accordance with *section 1010.4 of the building code as listed in rule 1301:7-7-80 of the Administrative Code*, and that is used in accordance with *section 1010.4.1 of the building code as listed in rule 1301:7-7-80 of the Administrative Code*.

(a) **[BE] 1010.1.9.5.1 Closet and bathroom doors in Group R-4 occupancies.** In Group I-1 and Group R-4 occupancies, closet doors that latch in the closed position shall be *operable* from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.

(vi) **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 *paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code* or an approved automatic smoke or heat detection system installed *throughout the locked space* in accordance with *paragraph (G)(907) of rule 1301:7-7-09 of the Administrative Code*, provided that the doors are installed and operate in accordance with all of the following:

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- (a) The door locks shall unlock upon actuation of the automatic sprinkler system or automatic fire detection system.
- (b) The door locks shall unlock upon loss of power controlling the lock or lock mechanism.
- (c) 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.
- (d) 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.
- (e) The procedures for unlocking the doors shall be described and approved as part of the emergency planning and preparedness required by rule 1301:7-7-04 of the Administrative Code.
- (f) All clinical staff shall have the keys, codes or other means necessary to operate the locking systems.
- (g) Emergency lighting shall be provided at the door.
- (h) The door locking system units shall be listed in accordance with UL 294 as listed in rule 1301:7-7-80 of the Administrative Code.

**Exceptions:**

1. Items (a) to (d) 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 (a) to (d) 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.

(vii) **[BE] 1010.1.9.7 Delayed egress.** Delayed egress locking systems, shall be permitted to be installed on doors serving any occupancy except Group A, E and H in buildings that are equipped throughout with an automatic sprinkler system in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code* or an approved automatic smoke or heat detection system installed in accordance with *paragraph (G)(907) of rule 1301:7-7-09 of the Administrative Code*. The locking system shall be installed and operated in accordance with all of the following:

- (a) 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.
- (b) 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.
- (c) The delayed egress locking system shall have the capability of being deactivated at the fire command center and other approved locations.
- (d) An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit 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.

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**Exception:** Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

(e) The egress path from any point shall not pass through more than one delayed egress locking system.

**Exception:** In Group I-2 or I-3 occupancies, the egress path from any point in the building shall not pass through more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.

(f) A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware.

(i) For doors that swing in the direction of egress, the sign shall read: "PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS."

(ii) For doors that swing in the opposite direction of egress, the sign shall read: "PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS."

(iii) The sign shall comply with the visual character requirements in ICC A117.1 as listed in rule 1301:7-7-80 of the Administrative Code.

**Exception:** Where approved, 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.

(g) Emergency lighting shall be provided on the egress side of the door.

(h) The delayed egress locking system units shall be listed in accordance with UL 294 as listed in rule 1301:7-7-80 of the Administrative Code.

(i) The procedures for the operation(s) of the unlocking system shall be described and approved as part of the emergency planning and preparedness required by rule 1301:7-7-04 of the Administrative Code.

(j) All clinical staff shall have the keys, codes or other means necessary to operate the locking devices.

**(viii) [BE] 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 Groups A, B, E, I-1, I-2, I-4, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, E, I-1, I-2, I-4, M, R-1 or R-2 are permitted where installed and operated in accordance with all of the following criteria:

(a) 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.

(b) Loss of power to the lock or locking system shall automatically unlock the doors.

(c) The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 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.

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- (d) 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.
- (e) Activation of the building automatic sprinkler or fire detection system, where provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
- (f) The door locking system units shall be listed in accordance with UL 294 as listed in rule 1301:7-7-80 of the Administrative Code.

(ix) [BE] 1010.1.9.9 Electromagnetically locked egress doors. Doors in the means of egress in buildings with an occupancy in Group A, B, E, I-1, I-2, I-4, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, I-1, I-2, I-4, 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:

- (a) The hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
- (b) The hardware is capable of being operated with one hand.
- (c) Operation of the hardware directly interrupts the power to the electromagnetic lock and unlocks the door immediately.
- (d) Loss of power to the locking system automatically unlocks the door.
- (e) Where panic or fire exit hardware is required by *paragraph (H)(a)(x)(1010.1.10) of this rule*, operation of the panic or fire exit hardware also releases the electromagnetic lock.
- (f) The locking system units shall be listed in accordance with UL 294 as listed in rule 1301:7-7-80 of the Administrative Code.

(x) [BE] 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:

- (a) Activation of an automatic sprinkler system installed in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code.*
- (b) Activation of an approved manual fire alarm box.
- (c) A signal from a constantly attended location.

(xi) [BE] 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 paragraph shall not apply to doors arranged in accordance with section 403.5.3 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.
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. Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single exit stair where permitted in paragraph (F)(3)(b)(1006.3.2) of this rule.
5. Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the dwelling unit is from a single exit stairway where permitted in paragraph (F)(3)(b)(1006.3.2) of this rule.

(j) **[BE] 1010.1.10 Panic and fire exit hardware.** Doors serving a Group H occupancy and doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

**Exceptions:**

1. A main exit of a Group A occupancy shall be permitted to be locking in accordance with paragraph (J)(1)(i)(iii)(1010.1.9.3), Item 2 of this rule.
2. Doors serving a Group A or E occupancy shall be permitted to be electromagnetically locked in accordance with paragraph (J)(1)(i)(ix)(1010.1.9.9) of this rule.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain over-current devices, switching devices or control devices with exit or exit access doors, must be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.

(i) **[BE] 1010.1.10.1 Installation.** Where panic or fire exit hardware is installed, it shall comply with the following:

- (a) Panic hardware shall be listed in accordance with UL 305 as listed in rule 1301:7-7-80 of the Administrative Code.
- (b) Fire exit hardware shall be listed in accordance with UL 10C and UL 305 as listed in rule 1301:7-7-80 of the Administrative Code.
- (c) The actuating portion of the releasing device shall extend not less than one-half of the door leaf width.
- (d) The maximum unlatching force shall not exceed 15 pounds (67 N).

(ii) **[BE] 1010.1.10.2 Balanced doors.** If balanced doors are used and panic hardware is required, the panic hardware shall be of the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

(2) **[BE] 1010.2 Gates.** Gates serving the means of egress system shall comply with the requirements of this paragraph. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

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**Exception:** Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.

(a) **[BE] 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 m<sup>2</sup>) 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 *paragraph (BB)(5)(1028.5) of this rule* for means of egress from safe dispersal areas.

(3) **[BE] 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.

**Exception:** Each turnstile or similar device shall be credited with a capacity based on not more than a 50-person occupant load where all of the following provisions are met:

1. Each device shall turn free in the direction of egress travel when primary power is lost, and on the manual release by an employee in the area.
2. Such devices are not given credit for more than 50 per cent of the required egress capacity or width.
3. Each device is not more than 39 inches (991 mm) high.
4. Each device has not less than 16½ inches (419 mm) clear width at and below a height of 39 inches (991 mm) and not less than 22 inches (559 mm) clear width at heights above 39 inches (991 mm).

Where located as part of an accessible route, turnstiles shall have not less than 36 inches (914 mm) clear at and below a height of 34 inches (864 mm), not less than 32 inches (813 mm) clear width between 34 inches (864 mm) and 80 inches (2032 mm) and shall consist of a mechanism other than a revolving device.

(a) **[BE] 1010.3.1 High turnstile.** Turnstiles more than 39 inches (991 mm) high shall meet the requirements for revolving doors.

(b) **[BE] 1010.3.2 Additional door.** Where serving an occupant load greater than 300, each turnstile that is not portable shall have a side-hinged swinging door that conforms to *paragraph (J)(1)(1010.1) of this rule* within 50 feet (15 240 mm).

#### **(K) Section 1011 Stairways**

(1) **[BE] 1011.1 General.** Stairways serving occupied portions of a building shall comply with the requirements of *paragraphs (K)(2)(1011.2) to (K)(13)(1011.13) of this rule*. Alternating tread devices shall comply with *paragraph (K)(14)(1011.14) of this rule*. Ships ladders shall comply with *paragraph (K)(15)(1011.15) of this rule*. Ladders shall comply with *paragraph (K)(16)(1011.16) of this rule*.

**Exception:** Within rooms or spaces used for assembly purposes, stepped aisles shall comply with *paragraph (CC)(1029) of this rule*.

(2) **[BE] 1011.2 Width and capacity.** The required capacity of stairways shall be determined as specified in *paragraph (E)(1)(1005.1) of this rule*, but the minimum width shall not be less than 44 inches (1118 mm). See *paragraph (I)(3)(1009.3) of this rule* for accessible means of egress stairways.

#### **Exceptions:**

1. Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches (914 mm).

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2. Spiral stairways as provided for in *paragraph (K)(10)(1011.10) of this rule.*
3. Where an incline platform lift or 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.

**(3) [BE] 1011.3 Headroom.** Stairways shall have a minimum headroom clearance of 80 inches (2032 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.

**Exceptions:**

1. Spiral stairways complying with *paragraph (K)(10)(1011.10) of this rule* are permitted a 78-inch (1981 mm) headroom clearance.
2. 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 4¾ inches (121 mm).

**(4) [BE] 1011.4 Walkline.** The walkline across winder treads shall be concentric to the direction of travel through the turn and located 12 inches (305 mm) from the side where the winders are narrower. The 12 inch (305 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.

**(5) 1011.5 Stair treads and risers.** Stair treads and risers shall comply with *paragraphs (K)(5)(a)(1011.5.1) to (K)(5)(e)(iii)(1011.5.5.3) of this rule.*

**(a) [BE] 1011.5.1 Dimension reference surfaces.** For the purpose of this *paragraph*, all dimensions are exclusive of carpets, rugs, or runners.

**(b) [BE] 1011.5.2 Riser height and tread depth.** Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the nosings of adjacent treads. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost protection of adjacent treads and at a right angle to the tread's nosing. Winder treads shall have a minimum tread depth of 11 inches (279 mm) measured 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 *paragraph (K)(10)(1011.10) of this rule.*
2. Stairways connecting stepped aisles to cross aisles or concourses shall be permitted to use the riser/tread dimension in *paragraph (CC)(13)(b)(1029.13.2) of this rule.*
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

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occupancies; the maximum riser height shall be 8¼ inches (209.55 mm); the minimum tread depth shall be 9 inches (228.6 mm); the minimum winder tread depth at the walkline shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing projection not less than ¼ inch (19.1 mm) but not more than 1¼ inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).

4. See section 403.1 of the International Existing Building Code as listed in rule 1301:7-7-80 of the Administrative Code for the replacement of existing stairways.
5. In Group I-3 facilities, stairways providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m<sup>2</sup>) in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).

**(c) [BE] 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 paragraph (K)(9)(1011.9) of this rule.
2. Spiral stairways in accordance with paragraph (K)(10)(1011.10) of this rule.

**(d) [BE] 1011.5.4 Dimensional uniformity.** Stair treads and risers shall be of uniform size and shape. The tolerance between the largest and smallest riser or between the largest and smallest tread shall not exceed ⅜ inch (9.5 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 ⅜ 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 paragraph (CC)(13)(b)(1029.13.2) of this rule.
2. Consistently shaped winders, complying with paragraph (K)(5)(1011.5) of this rule, differing from rectangular treads in the same flight of stairs.
3. Nonuniform riser dimension complying with paragraph (K)(5)(d)(i)(1011.5.4.1) of this rule.

**(i) [BE] 1011.5.4.1 Nonuniform height risers.** 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 (102 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-per cent 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 mm) but not more than 2 inches (51 mm).

**(e) [BE] 1011.5.5 Nosing and riser profile.** Nosings shall have a curvature or bevel of not less than 1/16 inch (1.6 mm) but not more than 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.

**(i) [BE] 1011.5.5.1 Nosing projection size.** The leading edge (nosings) of treads shall project not more than 1¼ inches (32 mm) beyond the tread below.

(ii) **[BE] 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.

(iii) **[BE] 1011.5.5.3 Solid risers.** Risers shall be solid.

**Exceptions:**

1. Solid risers are not required for stairways that are not required to comply with *paragraph (I)(3)(1009.3) of this rule*, provided that the opening between treads does not permit the passage of a sphere with a diameter of 4 inches (102 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. Solid risers are not required for spiral stairways constructed in accordance with *paragraph (K)(10)(1011.10) of this rule*.

(6) **[BE] 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 (1219 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 (178 mm) into a landing. Where wheelchair spaces are required on the stairway landing in accordance with *paragraph (I)(6)(c)(1009.6.3) of this rule*, 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 *paragraph (CC)(1029) of this rule*.

(7) **[BE] 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.

(a) **[BE] 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-per cent 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 ½-inch diameter (12.7 mm) 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 1½ inches (29 mm) cannot pass through the opening.

(b) **[BE] 1011.7.2 Outdoor conditions.** Outdoor stairways and outdoor approaches to stairways shall be designed so that water will not accumulate on walking surfaces.

(c) **[BE] 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 ½-inch (12.7 mm) gypsum board.

(d) [BE] 1011.7.4 Enclosure 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.

(8) [BE] 1011.8 Vertical rise. A flight of stairs shall not have a vertical rise greater than 12 feet (3658 mm) between floor levels or landings.

**Exception:** Spiral stairways used as a means of egress from technical production areas.

(9) [BE] 1011.9 Curved stairways. Curved stairways with winder treads shall have treads and risers in accordance with *paragraph (K)(5)(1011.5) of this rule* and the smallest radius shall be not less than twice the minimum width or required capacity of the stairway.

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

(10) [BE] 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 m<sup>2</sup>) in area and serving not more than five occupants, or from technical production areas in accordance with section 410.6 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

A spiral stairway shall have a 7½ inch (191 mm) minimum clear tread depth at a point 12 inches (305 mm) from the narrow edge. The risers shall be sufficient to provide a headroom of 78 inches (1981 mm) minimum, but riser height shall not be more than 9½ inches (241 mm). The minimum stairway clear width at and below the handrail shall be 26 inches (660 mm).

(11) [BE] 1011.11 Handrails. Stairways shall have handrails on each side and shall comply with *paragraph (N)(1014) of this rule.* Where glass is used to provide the handrail, the handrail shall also comply with section 2407 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

**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 three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require handrails.

(12) [BE] 1011.12 Stairway to roof. In buildings four or more stories above grade plane, one stairway shall extend to the roof surface, unless the roof has a slope steeper than four units vertical in 12 units horizontal (33-per cent slope).

**Exception:** In buildings without an occupied roof, access to the roof from the top story shall be permitted to be by an alternating tread device, a ships ladder or a permanent ladder.

(a) **[BE] 1011.12.1 Roof access.** Where a stairway is provided to a roof, access to the roof shall be provided through a penthouse complying with section 1510.2 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

**Exception:** In buildings without an occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet (1.5 m<sup>2</sup>) in area and having a minimum dimension of 2 feet (610 mm).

(13) **[BE] 1011.13 Guards.** Guards shall be provided along stairways and landings where required by *paragraph (O)(1015) of this rule* and shall be constructed in accordance with *paragraph (O)(1015) of this rule*. 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 *paragraph (O)(1015) of this rule*.

(14) **[BE] 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 m<sup>2</sup>) 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 m<sup>2</sup>) 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.

(a) **[BE] 1011.14.1 Handrails of alternating tread devices.** Handrails shall be provided on both sides of alternating tread devices and shall comply with *paragraph (N)(1014) of this rule*.

(b) **[BE] 1011.14.2 Treads of alternating tread devices.** Alternating tread devices shall have a minimum tread depth of 5 inches (127 mm), a minimum tread depth of 8½ inches (216 mm), a minimum tread width of 7 inches (178 mm) and a maximum riser height of 9½ inches (241 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 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 m<sup>2</sup>) in area that serves not more than five occupants shall have a minimum tread depth of 3 inches (76 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 mm).

(15) **[BE] 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 m<sup>2</sup>) 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).

(a) **[BE] 1011.15.1 Handrails of ships ladders.** Handrails shall be provided on both sides of ships ladders.

(b) **[BE] 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 (216 mm). The maximum riser height shall be 9½ inches (241 mm).

(16) **[BE] 1011.16 Ladders.** Permanent ladders shall not serve as a part of the means of egress from occupied spaces within a building. Permanent ladders shall be permitted to provide access to the following areas:

(a) Spaces frequented only by personnel for maintenance, repair or monitoring of equipment.

- (b) Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.
- (c) 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.
- (d) Elevated levels in Group U not open to the general public.
- (e) Nonoccupied roofs that are not required to have stairway access in accordance with *paragraph (K)(12)(a)(1011.12.1) of this rule.*
- (f) Ladders shall be constructed in accordance with section 306.5 of the *mechanical code as listed in rule 1301:7-7-80 of the Administrative Code.*

**(L) Section 1012 Ramps**

(1) [BE] 1012.1 Scope. The provisions of this *paragraph* shall apply to ramps used as a component of a means of egress.

**Exceptions:**

1. Ramped aisles within assembly rooms or spaces shall comply with the provisions in *paragraph (CC)(1029) of this rule.*
2. Curb ramps shall comply with *the building code as listed in rule 1301:7-7-80 of the Administrative Code.*
3. Vehicle ramps in parking garages for pedestrian exit access shall not be required to comply with *paragraphs (L)(3)(1012.3) to (L)(10)(1012.10) of this rule* where they are not an accessible route serving accessible parking spaces, other required accessible elements or part of an accessible means of egress.

(2) [BE] 1012.2 Slope. Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-*per cent* slope). The slope of other pedestrian ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-*per cent* slope).

(3) [BE] 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-*per cent* slope).

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

(5) [BE] 1012.5 Minimum dimensions. The minimum dimensions of means of egress ramps shall comply with *paragraphs (L)(5)(a)(1012.5.1) to (L)(5)(c)(1012.5.3) of this rule.*

(a) [BE] 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 *paragraph (T)(2)(1020.2) of this rule.* The clear width of a ramp between handrails, if provided, or other permissible projections shall be 36 inches (914 mm) minimum.

(b) [BE] 1012.5.2 Headroom. The minimum headroom in all parts of the means of egress ramp shall be not less than 80 inches (2032 mm).

(c) [BE] 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 (1067 mm).



(6) **[BE] 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 paragraphs (L)(6)(a)(1012.6.1) to (L)(6)(e)(1012.6.5) of this rule.

(a) **[BE] 1012.6.1 Slope.** Landings shall have a slope not steeper than one unit vertical in 48 units horizontal (2 per cent slope) in any direction. Changes in level are not permitted.

(b) **[BE] 1012.6.2 Width.** The landing shall be not less than the width of the widest ramp run adjoining the landing.

(c) **[BE] 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 A units or Type B units in accordance with section 1107 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, landings are permitted to be 36 inches (914 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.

(d) **[BE] 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 A units or Type B units in accordance with section 1107 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, landings are permitted to be 36 inches by 36 inches (914 mm by 914 mm) minimum.

(e) **[BE] 1012.6.5 Doorways.** Where doorways are located adjacent to a ramp landing, maneuvering clearances required by the building code as listed in rule 1301:7-7-80 of the Administrative Code are permitted to overlap the required landing area.

(7) **[BE] 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.

(a) **[BE] 1012.7.1 Ramp surface.** The surface of ramps shall be of slip resistant materials that are securely attached.

(b) **[BE] 1012.7.2 Outdoor conditions.** Outdoor ramps and outdoor approaches to ramps shall be designed so that water will not accumulate on walking surfaces.

(8) **[BE] 1012.8 Handrails.** Ramps with a rise greater than 6 inches (152 mm) shall have handrails on both sides. Handrails shall comply with paragraph (N)(1014) of this rule.

(9) **[BE] 1012.9 Guards.** Guards shall be provided where required by paragraph (O)(1015) of this rule and shall be constructed in accordance with paragraph (O)(1015) of this rule.

(10) **[BE] 1012.10 Edge protection.** Edge protection complying with paragraphs (L)(10)(a)(1012.10.1) or (L)(10)(b)(1012.10.2) of this rule shall be provided on each side of ramp runs and at each side of ramp landings.

**Exceptions:**

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1. Edge protection is not required on ramps that are not required to have handrails, provided they have flared sides that comply with the *building code as listed in rule 1301:7-7-80 of the Administrative Code* curb ramp provisions.
2. Edge protection is not required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection is not required on the sides of ramp landings having a vertical dropoff of not more than ½ inch (12.7 mm) within 10 inches (254 mm) horizontally of the required landing area.

(a) **[BE] 1012.10.1 Curb, rail, wall or barrier.** A curb, rail, wall or barrier shall be provided to serve as edge protection. A curb shall be not less than 4 inches (102 mm) in height. Barriers shall be constructed so that the barrier prevents the passage of a 4-inch-diameter (102 mm) sphere, where any portion of the sphere is within 4 inches (102 mm) of the floor or ground surface.

(b) **[BE] 1012.10.2 Extended floor or ground surface.** The floor or ground surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with *paragraph (N)(1014) of this rule.*

#### **(M) Section 1013 Exit signs**

(1) **[BE] 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. Main exterior exit doors or gates that are obviously and clearly identifiable as exits need not have exit signs where approved by the fire code official *pursuant to paragraph (A)(1)(1001.1) of this rule.* At *locations or in structures not regulated by the building code as listed in rule 1301:7-7-80 of the Administrative Code,* main exterior exit doors or gates which obviously and clearly are identifiable as exits need not have exit signs where approved by the fire code official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.
4. Exit signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in Group I.
5. In occupancies in Groups A-4 and A-5 exits 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. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

(2) **[BE] 1013.2 Floor-level exit signs in Group R-1.** Where exit signs are required in Group R-1 occupancies by *paragraph (M)(1)(1013.1) of this rule,* additional low-level exit signs shall be provided in all areas serving guestrooms in Group R-1 occupancies and shall comply with *paragraph (M)(5)(1013.5) of this rule.*

The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 12 inches (305 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 (102 mm) of the door frame on the latch side.

(3) **[BE] 1013.3 Illumination.** Exit signs shall be internally or externally illuminated.

Exception: Tactile signs required by paragraph (M)(4)(1013.4) of this rule need not be provided with illumination.

(4) **[BE] 1013.4 Raised character and braille exit signs.** A sign stating "EXIT" in visual characters, raised characters and braille and complying with the building code as listed in rule 1301:7-7-80 of the Administrative Code shall be provided adjacent to each door to an area of refuge, an exterior area for assisted rescue, an exit stairway or ramp, an exit passageway and the exit discharge.

(5) **[BE] 1013.5 Internally illuminated exit signs.** Electrically powered, self-luminous and photoluminescent exit signs shall be listed and labeled in accordance with UL 924 as listed in rule 1301:7-7-80 of the Administrative Code and shall be installed in accordance with the manufacturer's instructions and paragraph (D)(604) of rule 1301:7-7-06 of the Administrative Code. Exit signs shall be illuminated at all times.

(6) **1013.6 Externally illuminated exit signs.** Externally illuminated exit signs shall comply with paragraphs (M)(6)(a)(1013.6.1) to (M)(6)(c)(1013.6.3) of this rule.

(a) **[BE] 1013.6.1 Graphics.** Every exit sign and directional exit sign shall have plainly legible letters not less than 6 inches (152 mm) high with the principal strokes of the letters not less than 3/4 inch (19.1 mm) wide. The word "EXIT" shall have letters having a width not less than 2 inches (51 mm) wide, except the letter "I," and the minimum spacing between letters shall be not less than 3/8 inch (9.5 mm). Signs larger than the minimum established in this paragraph 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. If 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.

(b) **[BE] 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 5 footcandles (54 lux).

(c) **[BE] 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 paragraph (D)(604) of rule 1301:7-7-06 of the Administrative Code.

**Exceptions:**

1. Approved exit sign illumination means that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.
2. Group I-2 Condition 2 exit sign illumination shall not be provided by unit equipment battery only.

**(N) Section 1014 Handrails**

(1) **[BE] 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 of the building code as listed in rule

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1301:7-7-80 of the Administrative Code. Handrails required for stairways by paragraph (K)(11)(1011.11) of this rule shall comply with paragraphs (N)(2)(1014.2) to (N)(9)(1014.9) of this rule. Handrails required for ramps by paragraph (L)(8)(1012.8) of this rule shall comply with paragraphs (N)(2)(1014.2) to (N)(8)(1014.8) of this rule. Handrails for stepped aisles and ramped aisles required by paragraph (CC)(15)(1029.15) of this rule shall comply with paragraphs (N)(2)(1014.2) to (N)(8)(1014.8) of this rule.

(2) [BE] 1014.2 Height. Handrail height, measured above stair tread nosings, or finish surface of ramp slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 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 (864 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, 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. Handrails on top of a guard where permitted along stepped aisles and ramped aisles in accordance with paragraph (CC)(15)(1029.15) of this rule.

(3) [BE] 1014.3 Handrail graspability. Required handrails shall comply with paragraph (N)(3)(a)(1014.3.1) of this rule 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 paragraph (N)(3)(a)(1014.3.1) of this rule, Type II in accordance with paragraph (N)(3)(b)(1014.3.2) of this rule or shall provide equivalent graspability.

(a) [BE] 1014.3.1 Type I. Handrails with a circular cross section shall have an outside diameter of not less than 1¼ inches (32 mm) and not greater than 2 inches (51 mm). Where the handrail is not circular, it shall have a perimeter dimension of not less than 4 inches (102 mm) and not greater than 6¼ inches (160 mm) with a maximum cross-sectional dimension of 2¼ inches (57 mm) and minimum cross-sectional dimension of 1 inch (25 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

(b) [BE] 1014.3.2 Type II. Handrails with a perimeter greater than 6¼ inches (160 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ¼ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of not less than 5/16 inch (8 mm) within ⅞ inch (22 mm) below the widest portion of the profile. This required depth shall continue for not less than ⅝ inch (10 mm) to a level that is not less than 1¼ inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be not less than 1¼ inches (32 mm) to a maximum of 2¼ inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

(4) [BE] 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.

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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 1½ inches (38 mm) of the bottom of the handrail shall not be considered to be obstructions. For each ½ inch (12.7 mm) of additional handrail perimeter dimension above 4 inches (102 mm), the vertical clearance dimension of 1½ inches (38 mm) shall be permitted to be reduced by ⅛ inch (3 mm).
4. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, 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 paragraph (CC)(15)(a)(1029.15.1) of this rule.

(5) **[BE] 1014.5 Fittings.** Handrails shall not rotate within their fittings.

(6) **[BE] 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 (305 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 (305 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 required to be accessible need extend only from the top riser to the bottom riser.
2. Handrails serving aisles in rooms or spaces used for assembly purposes are permitted to comply with the handrail extensions in accordance with paragraph (CC)(15)(1029.15) of this rule.
3. 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 are not required to be continuous between flights or to extend beyond the top or bottom risers.

(7) **[BE] 1014.7 Clearance.** Clear space between a handrail and a wall or other surface shall be not less than 1½ inches (38 mm). A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements.

(8) **[BE] 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 mm) minimum. Projections into the required width of aisles, stairways and ramps at each side shall not exceed 4½ inches (114 mm) at or below the handrail height. Projections into the required width shall not be limited above the minimum headroom height required in paragraph (K)(3)(1011.3) of this rule. Projections due to intermediate handrails shall not constitute a reduction in the egress width. Where a pair of intermediate handrails are provided within the stairway width without a walking surface between the pair of intermediate handrails and the distance between the pair of intermediate handrails is greater than 6 inches (152 mm), the available egress width shall be reduced by the distance between the closest edges of each such intermediate pair of handrails that is greater than 6 inches (152 mm).

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(9) [BE] 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.

**(O) Section 1015 Guards**

(1) [BE] 1015.1 General. Guards shall comply with the provisions of *paragraphs (O)(2)(1015.2) to (O)(7)(1015.7) of this rule*. Operable windows with sills located more than 72 inches (1829 mm) above finished grade or other surface below shall comply with *paragraph (O)(8)(1015.8) of this rule*.

(2) [BE] 1015.2 Where required. Guards shall be located along open sided walking surfaces, including mezzanines, equipment platforms, aisles, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Guards shall be adequate in strength and attachment in accordance with section 1607.8 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*.

**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 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 *paragraph (CC)(16)(b)(1029.16.2) of this rule*.

(a) [BE] 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*. Where the glazing provided does not meet the strength and attachment requirements in section 1607.8 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, complying guards shall be located along glazed sides of open-sided walking surfaces.

(3) [BE] 1015.3 Height. Required guards shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

- (a) From the adjacent walking surfaces.
- (b) On stairways and stepped aisles, from the line connecting the leading edges of the tread nosings.
- (c) On ramps and ramped aisles, from the ramp surface at the guard.

**Exceptions:**

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1. For occupancies in Group R-3 not more than three stories above grade in height and within individual dwelling units in occupancies in Group R-2 not more than three stories above grade in height with separate means of egress, required guards shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces or adjacent fixed seating.
2. 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 (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. 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 (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. The guard height in assembly seating areas shall comply with *paragraph (CC)(16)(1029.16) of this rule.*
5. Along alternating tread device 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 (864 mm), measured vertically from the leading edge of the device tread nosing.

**(4) [BE] 1015.4 Opening limitations.** Required guards shall not have openings that allow passage of a sphere 4 inches (102 mm) in diameter from the walking surface to the required guard height.

**Exceptions:**

1. From a height of 36 inches (914 mm) to 42 inches (1067 mm), guards shall not have openings that allow passage of a sphere 4 $\frac{3}{8}$  inches (111 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 mm) in diameter.
3. At elevated walking surfaces 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 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 mm) in diameter.
5. In assembly seating areas, guards required at the end of aisles in accordance with *paragraph (CC)(16)(d)(1029.16.4) of this rule* shall not have openings that allow passage of a sphere 4 inches (102 mm) in diameter up to a height of 26 inches (660 mm). From a height of 26 inches (660 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, guards shall not have openings that allow passage of a sphere 8 inches (203 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 $\frac{3}{8}$  (111 mm) inches in diameter.

**(5) [BE] 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.

**(6) [BE] 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

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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 mm) in diameter.

**Exception:** Guards are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 as listed in rule 1301:7-7-80 of the Administrative Code are affixed for use during the entire roof covering lifetime. The devices shall be re-evaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.

**(7) [BE] 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 mm) in diameter.

**Exception:** Guards are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 as listed in rule 1301:7-7-80 of the Administrative Code are affixed for use during the entire roof covering lifetime. The devices shall be re-evaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.

**(8) [BE] 1015.8 Window openings.** Windows in Group R-2 and R-3 buildings including dwelling units, where the top of the sill of an operable window opening is located less than 36 inches above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, shall comply with one of the following:

1. Operable windows where the top of the sill of the opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below and that are provided with window fall prevention devices that comply with ASTM F 2006 as listed in rule 1301:7-7-80 of the Administrative Code.
2. Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position.
3. Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F 2090 as listed in rule 1301:7-7-80 of the Administrative Code.
4. Operable windows that are provided with window opening control devices that comply with paragraph (O)(8)(a)(1015.8.1) of this rule.

**(a) [BE] 1015.8.1 Window opening control devices.** Window opening control devices shall comply with ASTM F 2090 as listed in rule 1301:7-7-80 of the Administrative Code. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by paragraph (DD)(2)(1030.2) of this rule.

**(P) Section 1016 Exit access**

**(1) [BE] 1016.1 General.** The exit access shall comply with the applicable provisions of paragraphs (C)(1003) to (O)(1015) of this rule. Exit access arrangement shall comply with paragraphs (P)(1016) to (U)(1021) of this rule.

**(2) [BE] 1016.2 Egress through intervening spaces.** Egress through intervening spaces shall comply with this paragraph.



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 3006.2, 3007 or 3008 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. 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 paragraphs 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.

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 occupancies 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 per cent 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-wide (1118 mm) 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.
- (a) **[BE] 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 such rooms or spaces of the smaller tenant occupy less than 10 per cent of the area of the larger tenant space through which they pass; are the same or similar occupancy group; a discernible path of egress travel to an exit is provided; and the means of egress into the adjoining space is not subject to locking from the egress side. A required means of egress serving the larger tenant space shall not pass through the smaller tenant space or spaces.

**(Q) Section 1017 Exit access travel distance**

(1) **[BE] 1017.1 General.** Travel distance within the exit access portion of the means of egress system shall be in accordance with this paragraph.

(2) **[BE] 1017.2 Limitations.** Exit access travel distance shall not exceed the values given in Table 1017.2 of this rule.

**Table 1017.2**  
**Exit access travel distance<sup>a</sup>**

| <b><u>Occupancy</u></b>     | <b><u>Without sprinkler system (feet)</u></b> | <b><u>With sprinkler system (feet)</u></b> |
|-----------------------------|---|--|
| <u>A, E, F-1, M, R, S-1</u> | <u>200</u>                                    | <u>250<sup>b</sup></u>                     |
| <u>I-1</u>                  | <u>Not permitted</u>                          | <u>250<sup>c</sup></u>                     |
| <u>B</u>                    | <u>200</u>                                    | <u>300<sup>c</sup></u>                     |
| <u>F-2, S-2, U</u>          | <u>300</u>                                    | <u>400<sup>c</sup></u>                     |
| <u>H-1</u>                  | <u>Not permitted</u>                          | <u>75<sup>d</sup></u>                      |
| <u>H-2</u>                  | <u>Not permitted</u>                          | <u>100<sup>d</sup></u>                     |
| <u>H-3</u>                  | <u>Not permitted</u>                          | <u>150<sup>d</sup></u>                     |
| <u>H-4</u>                  | <u>Not permitted</u>                          | <u>175<sup>d</sup></u>                     |
| <u>H-5</u>                  | <u>Not permitted</u>                          | <u>200<sup>c</sup></u>                     |
| <u>I-2, I-3, I-4</u>        | <u>Not permitted</u>                          | <u>200<sup>c</sup></u>                     |

For SI: 1 foot = 304.8 mm.

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

Section 402.8 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For the distance limitation in malls.

Section 404.9 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For the distance limitation through an atrium space.

Section 407.4 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For the distance limitation in Group I-2.

Section 408.6.1 and 408.8.1 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For the distance limitations in Group I-3.

Section 411.4 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For the distance limitation in special amusement buildings.

Section 412.7 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For the distance limitation in aircraft manufacturing facilities.

Paragraph (F)(2)(b)(ii)(1006.2.2.2) of *this rule*: For the distance limitation in refrigeration machinery rooms.

Paragraph (F)(2)(b)(iii)(1006.2.2.3) of *this rule*: For the distance limitation in refrigerated rooms and spaces.

Paragraph (F)(3)(b)(1006.3.2) of *this rule*: For buildings with one exit.

Paragraph (Q)(2)(b)(1017.2.2) of *this rule*: For increased distance limitation in Groups F-1 and S-1.

Paragraph (CC)(7)(1029.7) of *this rule*: For increased limitation in assembly seating.

Section 3103.4 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For temporary structures.

Section 3104.9 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*: For pedestrian walkways.

**b. Buildings equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code. See paragraph (C)(903) of rule 1301:7-7-09 of the Administrative Code for occupancies where automatic sprinkler systems are permitted in accordance with paragraph (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code.**

**c. Buildings equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code.**

**d. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(2)(e)(i)(903.2.5.1) of rule 1301:7-7-09 of the Administrative Code.**

(a) **[BE] 1017.2.1 Exterior egress balcony increase.** Exit access travel distances specified in Table 1017.2 of *this rule* 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 paragraph (U)(1021) of this rule. The length of such balcony shall be not less than the amount of the increase taken.

**(b) [BE] 1017.2.2 Group F-1 and S-1 increase.** The maximum exit access travel distance shall be 400 feet (122 m) in Group F-1 or S-1 occupancies where all of the following conditions are met:

- (i) The portion of the building classified as Group F-1 or S-1 is limited to one story in height.
- (ii) The minimum height from the finished floor to the bottom of the ceiling or roof slab or deck is 24 feet (7315 mm).
- (iii) The building is equipped throughout with an automatic sprinkler system in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code.*
- (iv) The portion of the building classified as Group F-1 or S-1 is equipped throughout with an early suppression fast response (ESFR) automatic fire sprinkler system in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code; and*
- (v) The portion of the building classified as Group F-1 or S-1 is equipped with a normally activated smoke exhaust system complying with *paragraph (J)(5)(910.5) of rule 1301:7-7-09 of the Administrative Code.*

**(3) [BE] 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.

**Exception:** 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.

**(a) [BE] 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.

**(R) Section 1018 Aisles**

**(1) [BE] 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 *paragraph*. 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 *paragraph (E)(7)(1005.7) of this rule.*

**(2) [BE] 1018.2 Aisles in assembly spaces.** Aisles and aisle accessways serving a room or space used for assembly purposes shall comply with *paragraph (CC)(1029) of this rule.*

**(3) [BE] 1018.3 Aisles in Groups B and M.** In Group B and M occupancies, the minimum clear aisle width shall be determined by *paragraph (E)(1)(1005.1) of this rule* for the occupant load served, but shall be not less than that required for corridors by *paragraph (T)(2)(1020.2) of this rule.*

**Exception:** Nonpublic aisles serving less than 50 people and not required to be accessible by chapter 11 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* need not exceed 28 inches (711 mm) in width.

**(4) [BE] 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 (22 880 mm).

**(5) [BE] 1018.5 Aisles in other than assembly spaces and Groups B and M.** In other than rooms or spaces used for assembly purposes and Group B and M occupancies, the minimum clear aisle capacity shall be determined by paragraph (E)(1)(1005.1) of this rule for the occupant load served, but the width shall be not less than that required for corridors by paragraph (T)(2)(1020.2) of this rule.

**Exception:** Nonpublic aisles serving less than 50 people and not required to be accessible by chapter 11 of the building code as listed in rule 1301:7-7-80 of the Administrative Code need not exceed 28 inches (711 mm) in width.

**(S) Section 1019 Exit access stairways and ramps**

**(1) [BE] 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 paragraph. The number of stories connected by exit access stairways and ramps shall include basements, but not mezzanines.

**(2) [BE] 1019.2 All occupancies.** Exit access stairways and ramps that serve floor levels within a single story are not required to be enclosed.

**(3) [BE] 1019.3 Occupancies other than Groups I-2 and I-3.** In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this paragraph shall be enclosed with a shaft enclosure constructed in accordance with section 713 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

**(a)** Exit access stairways and ramps that serve, or atmospherically communicate between, only two stories. Such interconnected stories shall not be open to other stories.

**(b)** In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.

**(c)** Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.

**(d)** Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code, 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 listed in rule 1301:7-7-80 of the Administrative Code. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.

**(e)** Exit access stairways and ramps within an atrium complying with the provisions of section 404 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

**(f)** Exit access stairways and ramps in open parking garages that serve only the parking garage.

**(g)** Exit access stairways and ramps serving open-air seating complying with the exit access travel distance requirements of paragraph (CC)(7)(1029.7) of this rule.

(h) 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.

(4) **[BE] 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

**Exception:** In Group I-3 occupancies, exit access stairways or ramps constructed in accordance with section 408 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* are not required to be enclosed.

### **(T) Section 1020 Corridors**

(1) **[BE] 1020.1 Construction.** Corridors shall be fire-resistance rated in accordance with Table 1020.1 of *this rule.* The corridor walls required to be fire-resistance rated shall comply with section 708 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* for fire partitions.

#### **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 Groups I-1 and 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 *paragraph (F)(2)(1006.2) of this rule.*
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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* and unprotected openings are permitted by Table 705.8 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

**[BE] Table 1020.1**  
**Corridor fire-resistance rating**

| <b>Occupancy</b>       | <b>Occupant load served by corridor</b> | <b>Required fire-resistance rating (hours)</b> |  |
|------------------------|---|--|--|
|                        |   | <b>Without sprinkler system</b>                | <b>With sprinkler system<sup>c</sup></b> |
| H-1, H-2, H-3          | All                                     | Not permitted                                  | <u>1</u>                                 |
| H-4, H-5               | Greater than 30                         | Not permitted                                  | <u>1</u>                                 |
| A, B, E, F, M, S, U    | Greater than 30                         | <u>1</u>                                       | <u>0</u>                                 |
| R                      | Greater than 10                         | Not permitted                                  | <u>0.5</u>                               |
| I-2 <sup>a</sup> , I-4 | All                                     | Not permitted                                  | <u>0</u>                                 |
| I-1, I-3               | All                                     | Not permitted                                  | <u>1<sup>b</sup></u>                     |

a. For requirements for occupancies in Group I-2, see sections 407.2 and 407.3 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see section 408.8 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

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- c. Buildings equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code where allowed.
- d. One hour when design qualifies in accordance with paragraph (C)(2)(h)(903.2.8), exception 3 of rule 1301:7-7-09 of the Administrative Code.

**(2) [BE] 1020.2 Width and capacity.** The required capacity of corridors shall be determined as specified in paragraph (E)(1)(1005.1) of this rule, but the minimum width shall be not less than that specified in Table 1020.2 of this rule.

**Exception:** In Group I-2 occupancies, corridors are not required to have a clear width of 96 inches (2438 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.

**[BE] Table 1020.2**  
**Minimum corridor width**

| <u>Occupancy</u>  | <u>Minimum width (inches)</u> |
|---|-------------------------------|
| <u>Any facilities not listed below</u>  | <u>44</u>                     |
| <u>Access to a utilization of mechanical, plumbing or electrical systems or equipment</u> | <u>24</u>                     |
| <u>With an occupant load of less than 50</u>  | <u>36</u>                     |
| <u>Within a dwelling unit</u>   | <u>36</u>                     |
| <u>In Group E with a corridor having an occupant load of 100 or more</u>                  | <u>72</u>                     |
| <u>In corridors and areas serving stretcher traffic in ambulatory care facilities</u>     | <u>72</u>                     |
| <u>Group I-2 in areas where required for bed movement</u>                                 | <u>96</u>                     |

For SI: 1 inch = 25.4 mm.

**(3) [BE] 1020.3 Obstruction.** The minimum width or required capacity of corridors shall be unobstructed.

**Exception:** Encroachments complying with paragraph (E)(7)(1005.7) of this rule.

**(4) [BE] 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 Occupancy 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, R-2, R-4, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code, the length of the dead end corridors shall not exceed 50 feet (15 240 mm).
- A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

**(5) [BE] 1020.5 Air movement in corridors.** Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

**Exceptions:**

- Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall

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be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.

2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m<sup>2</sup>) or less in area, utilization of corridors for conveying return air is permitted.
4. Incidental air movement from pressurized rooms within healthcare facilities, provided that the corridor is not the primary source of supply or return air to the room.

**(a) [BE] 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 is permitted for one or more of the following conditions:

- (i) The corridor is not required to be of fire-resistance-rated construction.
- (ii) The corridor is separated from the plenum by fire-resistance-rated construction.
- (iii) The air-handling system serving the corridor is shut down upon activation of the air handling unit smoke detectors required by the *mechanical code as listed in rule 1301:7-7-80 of the Administrative Code.*
- (iv) The air-handling system serving the corridor is shut down upon detection of sprinkler waterflow where the building is equipped throughout with an automatic sprinkler system.
- (v) The space between the corridor ceiling and the floor or roof structure above the corridor is used as a component of an approved engineered smoke control system.

**(6) [BE] 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 *paragraph (P)(2)(1016.2) of this rule* shall not be construed as intervening rooms.

**(U) Section 1021 Egress balconies**

**(1) [BE] 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.

**(2) [BE] 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.

(3) [BE] 1021.3 Openness. The long side of an egress balcony shall be at least 50 *per cent* open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

(4) [BE] 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:

- (a) Adjacent lot lines.
- (b) Other portions of the building.
- (c) Other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with section 705 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* based on fire separation distance.

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

#### **(V) Section 1022 Exits**

(1) [BE] 1022.1 General. Exits shall comply with *paragraphs (V)(1022) to (AA)(1027) of this rule* and the applicable requirements of *paragraphs (C)(1003) to (O)(1015) of this rule*. 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.

(2) [BE] 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 *paragraph (J)(1)(a)(1010.1.1) of this rule*.

(a) [BE] 1022.2.1 Detailed requirements. Exterior exit doors shall comply with the applicable requirements of *paragraph (J)(1)(1010.1) of this rule*.

(b) [BE] 1022.2.2 Arrangement. Exterior exit doors shall lead directly to the exit discharge or the public way.

#### **(W) Section 1023 Interior exit stairways and ramps**

(1) [BE] 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 *paragraph*. 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 *paragraph (X)(1024) of this rule*, except as permitted in *paragraph (BB)(1)(1028.1) of this rule*. An interior exit stairway or ramp shall not be used for any purpose other than as a means of egress and a circulation path.

(2) [BE] 1023.2 Construction. Enclosures for interior exit stairways and ramps shall be constructed as fire barriers in accordance with section 707 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* or horizontal assemblies constructed in accordance with section 711 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, 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.

#### **Exceptions:**

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1. Interior exit stairways and ramps in Group I-3 occupancies in accordance with the provisions of section 408.3.8 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.
2. Interior exit stairways within an atrium enclosed in accordance with section 404.6 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

**(3) [BE] 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 paragraphs (W)(2)(1023.2), (W)(3)(a)(1023.3.1) and (X)(1024) of this rule, 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.

**(a) [BE] 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code or a horizontal assembly constructed in accordance with section 711 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code 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 paragraph (W)(5)(1023.5) of this rule 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.

**(4) [BE] 1023.4 Openings.** Interior exit stairway and ramp opening protectives shall be in accordance with the requirements of section 716 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

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.

**(5) [BE] 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, 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 m<sup>2</sup>). Such penetrations shall be protected in accordance with section 714 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

(6) [BE] 1023.6 Ventilation. Equipment and ductwork for interior exit stairway and ramp ventilation as permitted by paragraph (W)(5)(1023.5) of this rule shall comply with one of the following items:

- (a) 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.
- (b) 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.
- (c) 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code for shaft enclosures.

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

(7) [BE] 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code 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 ¼ 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.

(8) [BE] 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 paragraph (M)(1013) of this rule.

(9) [BE] 1023.9 Stairway identification signs. A sign shall be provided at each floor landing in an interior exit stairway and ramp connecting more than three stories designating the floor level, the terminus of the top and bottom of the interior exit stairway and ramp and the identification of the stairway or ramp. The signage shall also state the story of, and the direction to, the exit discharge and the availability of roof access from the interior exit stairway and ramp for the fire department. The sign 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. In addition to the stairway identification sign a floor level sign in visual characters, raised characters and braille complying with accessibility requirements as set forth in chapter 11 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, shall be located at each floor level landing adjacent to the door leading from the interior exit stairway and ramp into the corridor to identify the floor level.

(a) [BE] 1023.9.1 Signage requirements. Stairway identification signs shall comply with chapter 11 of the building code as listed in rule 1301:7-7-80 of the Administrative Code and all of the following requirements:

- (i) The signs shall be a minimum size of 18 inches (457 mm) by 12 inches (305 mm).
- (ii) The letters designating the identification of the stair interior exit stairway and ramp shall be not less than 1½ inches (38 mm) in height.

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- (iii) 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.
- (iv) Other lettering and numbers shall be not less than 1 inch (25 mm) in height.
- (v) 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.
- (vi) Where signs required by *paragraph (W)(9)(1023.9) of this rule* are installed in interior exit stairways and ramps of buildings subject to *paragraph (Y)(1025) of this rule*, the signs shall be made of the same materials as required by *paragraph (Y)(4)(1025.4) of this rule*.

**(10) [BE] 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 *paragraph (W)(9)(a)(1023.9.1)*, items (iv), (v) and (vi) of this rule.

**(11) [BE] 1023.11 Smokeproof enclosures.** Where required by section 403.5.4 or 405.7.2 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, interior exit stairways and ramps shall be smokeproof enclosures in accordance with *paragraph (I)(20)(909.20) of rule 1301:7-7-09 of the Administrative Code*.

**(a) [BE] 1023.11.1 Termination and extension.** A smokeproof enclosure shall terminate at an exit discharge or a public way. The smokeproof enclosure shall be permitted to be extended by an exit passageway in accordance with *paragraph (W)(3)(1023.3) of this rule*. The exit passageway shall be without openings other than the fire door assembly required by *paragraph (W)(3)(a)(1023.3.1) of this rule* 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 constructed in accordance with section 707 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* or horizontal assemblies constructed in accordance with section 711 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, 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. The fire barrier separating the smokeproof enclosure from the exit passageway is not required, provided the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure.
3. A smokeproof enclosure shall be permitted to egress through areas on the level of exit discharge or vestibules as permitted by *paragraph (BB)(1028) of this rule*.

**(b) [BE] 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*.

**(X) Section 1024 Exit passageways**

**(1) [BE] 1024.1 Exit passageways.** Exit passageways serving as an exit component in a means of egress system shall comply with the requirements of this *paragraph*. An exit passageway shall not be used for any purpose other than as a means of egress and a circulation path.

**(2) [BE] 1024.2 Width.** The required capacity of exit passageways shall be determined as specified in *paragraph (E)(1)(1005.1) of this rule* but the minimum width shall be not less than 44 inches (1118 mm), except that exit passageways serving an occupant load of less than 50 shall be not less than 36 inches (914 mm) in width. The minimum width or required capacity of exit passageways shall be unobstructed.

**Exception:** Encroachments complying with *paragraph (E)(7)(1005.7) of this rule*.

**(3) [BE] 1024.3 Construction.** Exit passageway enclosures shall have walls, floors and ceilings of not less than 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* or horizontal assemblies constructed in accordance with section 711 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, or both.

**(4) [BE] 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.

**(5) [BE] 1024.5 Openings.** Exit passageway opening protectives shall be in accordance with the requirements of section 716 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*.

Except as permitted in section 402.8.7 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*, 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 *paragraph (W)(3)(a)(1023.3.1) of this rule*.

Elevators shall not open into an exit passageway.

**(6) [BE] 1024.6 Penetrations.** Penetrations into or through an exit passageway are prohibited except for equipment and ductwork necessary for independent pressurization, 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 m<sup>2</sup>). Such penetrations shall be protected in accordance with section 714 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*. 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*.

**(7) [BE] 1024.7 Ventilation.** Equipment and ductwork for exit passageway ventilation as permitted by *paragraph (X)(6)(1024.6) of this rule* shall comply with one of the following:

(a) 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.

- (b) 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.
- (c) 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* for shaft enclosures.

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

**(Y) Section 1025 Luminous egress path markings**

(1) **[BE] 1025.1 General.** Approved luminous egress path markings delineating the exit path shall be provided in high-rise buildings of Group A, B, E, I, M and R-1 occupancies in accordance with *paragraphs (Y)(1)(1025.1) to (Y)(5)(1025.5) of this rule.*

**Exception:** 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 *paragraph (BB)(1)(1028.1) of this rule, exception 1.*

(2) **[BE] 1025.2 Markings within exit components.** Egress path markings shall be provided in interior exit stairways, interior exit ramps and exit passageways, in accordance with *paragraphs (Y)(2)(a)(1025.2.1) to (Y)(2)(f)(1025.2.6) of this rule.*

(a) **[BE] 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 mm) and a maximum width of 2 inches (51 mm). The leading edge of the stripe shall be placed not more than ½ inch (12.7 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by not more than ½ inch (12.7 mm) down the vertical face of the step.

**Exception:** The minimum width of 1 inch (25 mm) shall not apply to outlining stripes listed in accordance with *UL 1994 as listed in rule 1301:7-7-80 of the Administrative Code.*

(b) **[BE] 1025.2.2 Landings.** The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.

(c) **[BE] 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 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 turn corners, the stripe shall not have a gap of more than 4 inches (102 mm).

**Exception:** The minimum width of 1 inch (25 mm) shall not apply to outlining stripes listed in accordance with *UL 1994 as listed in rule 1301:7-7-80 of the Administrative Code.*

(d) **[BE] 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 mm to 51 mm) wide with interruptions not exceeding 4 inches (102 mm).

**Exception:** The minimum width of 1 inch (25 mm) shall not apply to outlining stripes listed in accordance with *UL 1994 as listed in rule 1301:7-7-80 of the Administrative Code.*

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(i) **[BE] 1025.2.4.1 Floor mounted demarcation lines.** Perimeter demarcation lines shall be placed within 4 inches (102 mm) of the wall and shall extend to within 2 inches (51 mm) of the markings on the leading edge of landings. The demarcation lines shall continue across the floor in front of all doors.

**Exception:** 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.

(ii) **[BE] 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 (102 mm) above the finished floor. At the top or bottom of the stairs, demarcation lines shall drop vertically to the floor within 2 inches (51 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.

**Exception:** 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.

(iii) **[BE] 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 complimentary extension of the floor-mounted demarcation line, thus forming a continuous marking.

(e) **[BE] 1025.2.5 Obstacles.** Obstacles at or below 6 feet 6 inches (1981 mm) in height and projecting more than 4 inches (102 mm) into the egress path shall be outlined with markings not less than 1 inch (25 mm) in width comprised of a pattern of alternating equal bands, of luminescent luminous material and black, with the alternating bands not more than 2 inches (51 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.

(f) **[BE] 1025.2.6 Doors within the exit path.** Doors through which occupants must pass in order to complete the exit path shall be provided with markings complying with paragraphs (Y)(2)(f)(i)(1025.2.6.1) to (Y)(2)(f)(iii)(1025.2.6.3) of this rule.

(i) **[BE] 1025.2.6.1 Emergency exit symbol.** The doors shall be identified by a low-location luminous emergency exit symbol complying with NFPA 170 as listed in rule 1301:7-7-80 of the Administrative Code. The exit symbol shall be not less than 4 inches (102 mm) in height and shall be mounted on the door, centered horizontally, with the top of the symbol not higher than 18 inches (457 mm) above the finished floor.

(ii) **[BE] 1025.2.6.2 Door hardware markings.** Door hardware shall be marked with not less than 16 square inches (406 mm<sup>2</sup>) 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 be not less than 1 inch (25 mm) wide for the entire length of the actuating bar or touchpad.

(iii) **[BE] 1025.2.6.3 Door frame markings.** The top and sides of the door frame shall be marked with a solid and continuous 1-inch- to 2-inch-wide (25 mm to 51 mm) 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.

(3) **[BE] 1025.3 Uniformity.** Placement and dimensions of markings shall be consistent and uniform throughout the same enclosure.

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**(4) [BE] 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:

(a) UL 1994 as listed in rule 1301:7-7-80 of the Administrative Code, or

(b) ASTM E 2072 as listed in rule 1301:7-7-80 of the Administrative Code, except that the charging source shall be 1 footcandle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 30 milicandelas per square meter at 10 minutes and 5 milicandelas per square meter after 90 minutes.

**(5) [BE] 1025.5 Illumination.** Where photoluminescent exit path markings are installed, they shall be provided with not less than 1 footcandle (11 lux) of illumination for not less than 60 minutes prior to periods when the building is occupied and continuously during the building occupancy.

**(Z) Section 1026 Horizontal exits**

**(1) [BE] 1026.1 Horizontal exits.** Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this paragraph. 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 per cent of the exits required for occupancies in Group I-3.
3. Not less than 6 square feet (0.6 m<sup>2</sup>) of accessible space per occupant shall be provided on each side of the horizontal exit for the total number of people in adjoining compartments.

**(2) [BE] 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code; or by a fire barrier complying with section 707 of the building code as listed in rule 1301:7-7-80 of the Administrative Code or a horizontal assembly complying with section 711 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. Duct and air transfer openings in a fire wall or fire barrier that serves as a horizontal exit shall also comply with section 717 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code, 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.

**(3) [BE] 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 of the building code as listed in rule 1301:7-7-80 of the Administrative Code. 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code.*

(4) [BE] 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.

(a) [BE] 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 m<sup>2</sup>) 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 m<sup>2</sup>) per occupant for occupancies in Group I-3.
2. Fifteen square feet (1.4 m<sup>2</sup>) per occupant for ambulatory occupancies in Group I-2.
3. Thirty square feet (2.8 m<sup>2</sup>) per occupant for nonambulatory occupancies in Group I-2.

(b) [BE] 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 *rule*, but not including the added occupant load imposed by persons entering it through horizontal exits from other areas. Not less than one refuge area exit shall lead directly to the exterior or to an interior exit stairway or ramp.

Exception: The adjoining compartment shall not be required to have a stairway or door leading directly outside, provided the 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 compartment from which egress originates.

#### (AA) Section 1027 Exterior exit stairways and ramps

(1) [BE] 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 *paragraph*.

(2) [BE] 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, I-4 and daycare facilities in Group E occupancies. For occupancies in other than Group I-2, I-4 and daycare facilities in Group E occupancies, 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.

(3) [BE] 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 m<sup>2</sup>) 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 (1067 mm) above the adjacent floor or landing level.

(4) [BE] 1027.4 Side yards. 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.

(5) [BE] 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:



- (a) Adjacent lot lines.
- (b) Other portions of the building.
- (c) Other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with section 705 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* based on fire separation distance.

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

**(6) [BE] 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 *paragraph (W)(2)(1023.2) of this rule*. 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 *paragraph (W)(7)(1023.7) of this rule*.

**Exceptions:**

1. Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, 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 stairway or ramp is served by an exterior ramp or balcony that connects two remote exterior stairways or other approved exits, with a perimeter that is not less than 50 *per cent* open. To be considered open, the opening shall be not less than 50 *per cent* of the height of the enclosing wall, with the top of the openings not less than 7 feet (2134 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 to 3.5 are met:
  - 3.1. The building, including open-ended corridors, stairways and ramps, shall be equipped throughout with an automatic sprinkler system in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code*.
  - 3.2. The open-ended corridors comply with *paragraph (T)(1020) of this rule*.
  - 3.3. The open-ended corridors are connected on each end to an exterior exit stairway or ramp complying with *paragraph (AA)(1027) of this rule*.
  - 3.4. The exterior walls and openings adjacent to the exterior exit stairway or ramp comply with *paragraph (W)(7)(1023.7) of this rule*.
  - 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 m<sup>2</sup>) 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.

**(BB) Section 1028 Exit discharge**

**(1) [BE] 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

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combined use of exceptions 1 and 2 below shall not exceed 50 per cent of the number and minimum width or required capacity of the required exits.

**Exceptions:**

1. Not more than 50 per cent of the number and minimum width or required capacity of interior exit stairways and ramps is permitted to egress through areas on the level of discharge provided all of the following conditions are met:

  - 1.1 Discharge of interior exit stairways and ramps shall be provided with a free and unobstructed path of travel to an exterior exit door and such exit is readily visible and identifiable from the point of termination of the enclosure.
  - 1.2 The entire 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 egress path from the interior stairway and ramp on the level of exit discharge is protected throughout by an approved automatic sprinkler system. Portions of the level of exit discharge with access to the egress path shall either be equipped throughout with an automatic sprinkler system installed in accordance with *paragraph (C)(3)(a)(i)(903.3.1.1) or (C)(3)(a)(ii)(903.3.1.2) of rule 1301:7-7-09 of the Administrative Code* 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.
2. Not more than 50 per cent 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 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code*.

**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. Horizontal exits complying with *paragraph (Z)(1026) of this rule* shall not be required to discharge directly to the exterior of the building.

*Note: for copyright claim information, please see the notice on the last page of this rule.*

(2) [BE] 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.

(3) [BE] 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.

(4) [BE] 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 *paragraphs* (BB)(4)(a)(1028.4.1) and (BB)(4)(b)(1028.4.2) of this rule.

(a) [BE] 1028.4.1 Width or capacity. The required capacity of egress courts shall be determined as specified in *paragraph* (E)(1)(1005.1) of this rule, but the minimum width shall be not less than 44 inches (1118 mm), except as specified herein. Egress courts serving Group R-3 and U occupancies shall be not less than 36 inches (914 mm) in width. The required capacity and width of egress courts shall be unobstructed to a height of 7 feet (2134 mm).

**Exception:** Encroachments complying with *paragraph* (E)(7)(1005.7) of this rule.

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 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.

(b) [BE] 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 ¾ hour.

**Exceptions:**

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

(5) [BE] 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 m<sup>2</sup>) 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.

**(CC) Section 1029 Assembly**

(1) [BE] 1029.1 General. A room or space used for assembly purposes that contains seats, tables, displays, equipment or other material shall comply with this *paragraph*.

*Note: for copyright claim information, please see the notice on the last page of this rule.*

(a) **[BE] 1029.1.1 Bleachers.** Bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply with ICC 300 as listed in rule 1301:7-7-80 of the Administrative Code.

(i) **[BE] 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 m<sup>2</sup>) and toilet rooms, such spaces shall be separated by fire barriers complying with section 707 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* and horizontal assemblies complying with section 711 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* with not less than 1-hour fire-resistance-rated construction.

(2) **[BE] 1029.2 Assembly main exit.** 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 not be not less than the total required capacity of all means of egress leading to the exit. Where 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. 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 *per cent* of the required capacity.

(3) **[BE] 1029.3 Assembly other exits.** In addition to having access to a main exit, each level in a building used for assembly purposes having an occupant load greater than 300 and provided with a main exit, shall be provided with additional means of egress that shall provide an egress capacity for not less than one-half of the total occupant load served by that level and shall comply with *paragraph (G)(1)(1007.1) of this rule*. In a building used for assembly purposes where there is not a well-defined main exit or where multiple main exits are provided, exits for each level shall be permitted to be distributed around the perimeter of the building, provided that the total width of egress is not less than 100 *per cent* of the required width.

(4) **[BE] 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.

(5) **[BE] 1029.5 Interior balcony and gallery means of egress.** For balconies, galleries or press boxes having a seating capacity of 50 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.

(6) **[BE] 1029.6 Capacity of aisle for assembly.** The required capacity of aisles shall be not less than that determined in accordance with *paragraph (CC)(6)(a)(1029.6.1) of this rule* where smoke-protected assembly seating is not provided and with *paragraph (CC)(6)(b)(1029.6.2) or (CC)(6)(c)(1029.6.3) of this rule* where smoke-protected assembly seating is provided.

(a) **[BE] 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:

(i) 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 (178 mm) or less and tread depths 11 inches (279 mm) or greater, measured horizontally between tread nosings.

- (ii) 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 (178 mm).
- (iii) 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).
- (iv) Ramped aisles, where slopes are steeper than one unit vertical in 12 units horizontal (8-per cent 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-per cent slope), shall have not less than 0.20 inch (5.1 mm) of clear aisle capacity for each occupant served.

**(b) [BE] 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 rule. The total number of seats specified shall be those within the space exposed to the same smoke-protected environment. Interpolation is permitted between the specific values shown. A life safety evaluation, complying with section 12.4.1 of the building code as listed in rule 1301:7-7-80 of the Administrative Code or section 13.4.1 of NFPA 101 as listed in rule 1301:7-7-80 of the Administrative Code or other approved method, shall be done for a facility utilizing the reduced width requirements of Table 1029.6.2 of this rule for smoke-protected assembly seating.

**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 paragraph (CC)(6)(c)(1029.6.3) of this rule.

**[BE] Table 1029.6.2  
Capacity for aisles for smoke-protected assembly**

| <b>Total number of seats in the smoke-protected assembly seating</b> | <b>Inches of capacity per seat served</b>             |  |  |  |
|--|---|--|--|--|
|  | <b>Stepped aisles with handrails within 30 inches</b> | <b>Stepped aisles without handrails within 30 inches</b> | <b>Level aisles or ramped aisles not steeper than 1 in 10 in slope</b> | <b>Ramped aisles steeper than 1 in 10 in slope</b> |
| 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.

(i) **[BE] 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 paragraph (I)(909) of rule 1301:7-7-09 of the Administrative Code or natural ventilation designed to maintain the smoke level not less than 6 feet (1829 mm) above the floor of the means of egress.

(ii) **[BE] 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.

(iii) **[BE] 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 paragraph (C)(3)(a)(i)(903.3.1.1) of rule 1301:7-7-09 of the Administrative Code.

**Exceptions:**

1. The floor area used for the 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 (93 m<sup>2</sup>) in area.
3. Outdoor seating facilities where seating and the means of egress in the seating area are essentially open to the outside.

(c) **[BE] 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 level aisles and ramped aisles.

**Exception:** The required capacity in inches (mm) of aisles shall be permitted to comply with paragraph (CC)(6)(b)(1029.6.2) of this rule for the number of seats in the outdoor smoke-protected assembly seating where paragraph (CC)(6)(b)(1029.6.2) of this rule permits less capacity.

(7) **[BE] 1029.7 Travel distance.** Exits and aisles shall be so located that the travel distance to an exit door shall be not greater than 200 feet (60 960 mm) measured along the line of travel in nonsprinklered buildings. Travel distance shall be not more than 250 feet (76 200 mm) in sprinklered buildings. Where aisles are provided for seating, the distance shall be measured along the aisles and aisle accessways without travel over or on the seats.

**Exceptions:**

1. Smoke-protected assembly seating: The travel distance from each seat to the nearest entrance to a vomitory or concourse shall not exceed 200 feet (60 960 mm). The travel distance from the entrance 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: The travel distance from each seat to the building exterior shall not exceed 400 feet (122 m). The travel distance shall not be limited in facilities of Type I or II construction.

(8) **[BE] 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 serving less than 50 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).

**(a) [BE] 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 (305 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 (305 mm) plus 0.3 inch (7.6 mm) for each additional seat.

**(9) [BE] 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 *paragraph*.

**(a) [BE] 1029.9.1 Minimum aisle width.** The minimum clear width for aisles shall comply with one of the following:

(i) Forty-eight inches (1219 mm) for stepped aisles having seating on each side.

**Exception:** Thirty-six inches (914 mm) where the stepped aisles serve less than 50 seats.

(ii) Thirty-six inches (914 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.

(iii) Twenty-three inches (584 mm) between a stepped aisle handrail or guard and seating where the stepped aisle is subdivided by a mid-aisle handrail.

(iv) Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.

**Exceptions:**

1. Thirty-six inches (914 mm) where the aisle serves less than 50 seats.

2. Thirty inches (762 mm) where the aisle does not serve more than 14 seats.

(v) Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.

**Exception:** For other than ramped aisles that serve as part of an accessible route, 30 inches (762 mm) where the ramped aisle does not serve more than 14 seats.

**(b) [BE] 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.

**(c) [BE] 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.

**(d) [BE] 1029.9.4 Uniform width and capacity.** Those portions of aisles, where egress is possible in either of two directions, shall be uniform in minimum width or required capacity.

(e) **[BE] 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 *paragraph (CC)(9)(g)(1029.9.7) of this rule* having access to an exit.

**Exceptions:**

1. Dead-end aisles shall not be greater than 20 feet (6096 mm) in length.
2. Dead-end aisles longer than 16 rows are permitted where seats beyond the 16<sup>th</sup> row dead-end aisle are not more than 24 seats from another aisle, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.
3. For smoke-protected assembly seating, the dead-end aisle length of vertical aisles shall not exceed a distance of 21 rows.
4. For smoke-protected assembly seating, a longer dead-end aisle is permitted where seats beyond the 21-row dead-end aisle are not more than 40 seats from another aisle, measured along a row of seats having an aisle accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.

(f) **[BE] 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 *paragraph (CC)(12)(a)(1029.12.1) of this rule.*

(i) **[BE] 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 *paragraph (N)(8)(1014.8) of this rule.*

(g) **[BE] 1029.9.7 Stairways connecting to stepped aisles.** A stairway that connects a stepped aisle to a cross aisle or concourse shall be permitted to comply with the assembly aisle walking surface requirements of *paragraph (CC)(13)(1029.13) of this rule.* Transitions between stairways and stepped aisles shall comply with *paragraph (CC)(10)(1029.10) of this rule.*

(h) **[BE] 1029.9.8 Stairways connecting to vomitories.** A stairway that connects a vomitory to a cross aisle or concourse shall be permitted to comply with the assembly aisle walking surface requirements of *paragraph (CC)(13)(1029.13) of this rule.* Transitions between stairways and stepped aisles shall comply with *paragraph (CC)(10)(1029.10) of this rule.*

(10) **[BE] 1029.10 Transitions.** Transitions between stairways and stepped aisles shall comply with either *paragraph (CC)(10)(a)(1029.10.1) or (CC)(10)(b)(1029.10.2) of this rule.*

(a) **[BE] 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 *paragraph (CC)(13)(1029.13) of this rule* as one exit access component.



**(b) [BE] 1029.10.2 Transitions to stairways that do not maintain stepped aisle riser and tread dimensions.** Transitions between stepped aisles with riser and tread dimensions that differ from the stairways shall comply with paragraphs (CC)(10)(b)(i)(1029.10.2.1) and (CC)(10)(c)(1029.10.3) of this rule.

**(i) [BE] 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 (559 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.

**(ii) [BE] 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 (280 mm) or the stepped aisle tread depth, whichever is greater, between the stepped aisle and stairway.

**(c) [BE] 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 mm), and not more than 2 inches (51 mm), wide. The edge marking stripe shall be distinctively different from the stepped aisle contrasting marking stripe.

**(11) [BE] 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.

**(a) [BE] 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 paragraph (K)(7)(a)(1011.7.1) of this rule.

**(b) [BE] 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.

**(12) [BE] 1029.12 Aisle accessways.** Aisle accessways for seating at tables shall comply with paragraph (CC)(12)(a)(1029.12.1) of this rule. Aisle accessways for seating in rows shall comply with paragraph (CC)(12)(b)(1029.12.2) of this rule.

**(a) 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 (483 mm) away from and parallel to the edge of the table or counter. The 19-inch (483 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.

**(i) 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 paragraph (E)(1)(1005.1) of this rule but shall not have less than 12 inches (305 mm) of width plus ½ inch (12.7 mm) of width for each additional 1 foot (305 mm), or fraction thereof, beyond 12 feet (3658 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 (1829 mm) and used by a total of not more than four persons.

*Note: for copyright claim information, please see the notice on the last page of this rule.*

(ii) **[BE] 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.

(b) **[BE] 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 (305 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.

(i) **[BE] 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 (305 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 (559 mm).

**Exception:** For smoke-protected assembly seating, the row length limits for a 12-inch-wide (305 mm) aisle accessway, beyond which the aisle accessway minimum clear width shall be increased, are in Table 1029.12.2.1 of this rule.

**Table [BE] 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  |                         | Aisle or doorway at one end of row only |                         |
|   | Seats with backrests  | Seats without backrests | Seats with backrests                    | Seats without backrests |
| Less than 4,000   | 14  | 21                      | 7                                       | 10                      |
| 4,000   | 15  | 22                      | 7                                       | 10                      |
| 7,000   | 16  | 23                      | 8                                       | 11                      |
| 10,000  | 17  | 24                      | 8                                       | 11                      |
| 13,000  | 18  | 25                      | 9                                       | 12                      |
| 16,000  | 19  | 26                      | 9                                       | 12                      |
| 19,000  | 20  | 27                      | 10                                      | 13                      |
| 22,000 and greater  | 21  | 28                      | 11                                      | 14                      |

For SI: 1 inch = 25.4 mm.

(ii) **[BE] 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 (305 mm) between rows shall be increased by 0.6 inch (15.2 mm) for every additional seat beyond seven seats where seats have backrests or beyond 10 where seats are without backrests. The minimum clear width is not required to exceed 22 inches (559 mm).

**Exception:** For smoke-protected assembly seating, the row length limits for a 12-inch-wide (305 mm) aisle accessway, beyond which the aisle accessway minimum clear width shall be increased, are in Table 1029.12.2.1 of this rule.

(13) **[BE] 1029.13 Assembly aisle walking surfaces.** Ramped aisles shall comply with paragraphs (CC)(13)(a)(1029.13.1) to (CC)(13)(a)(iii)(1029.13.1.3) of this rule. Stepped aisles shall comply with paragraphs (CC)(13)(b)(1029.13.2) to (CC)(13)(b)(iv)(1029.13.2.4) of this rule.

*Note: for copyright claim information, please see the notice on the last page of this rule.*

(a) **[BE] 1029.13.1 Ramped aisles.** Aisles that are sloped more than one unit vertical in 20 units horizontal (5-per cent slope) shall be considered a ramped aisle. Ramped aisles that serve as part of an accessible route in accordance with *paragraph (I)(1009) of this rule* and section 1108.2 of the *building code as listed in rule 1301:7-7-80 of the Administrative Code* shall have a maximum slope of one unit vertical in 12 units horizontal (8-per cent slope). The slope of other ramped aisles shall not exceed one unit vertical in 8 units horizontal (12.5-per cent slope).

(i) **[BE] 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-per cent slope).

(ii) **[BE] 1029.13.1.2 Landings.** Ramped aisles shall have landings in accordance with *paragraphs (L)(6)(1012.6) to (L)(6)(e)(1012.6.5) of this rule*. Landings for ramped aisles shall be permitted to overlap required aisles or cross aisles.

(iii) **[BE] 1029.13.1.3 Edge protection.** Ramped aisles shall have edge protection in accordance with *paragraphs (L)(10)(1012.10) and (L)(10)(a)(1012.10.1) of this rule*.

**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.

(b) **[BE] 1029.13.2 Stepped aisles.** Aisles with a slope exceeding one unit vertical in eight units horizontal (12.5-per cent slope) shall consist of a series of risers and treads that extends across the full width of aisles and complies with *paragraphs (CC)(13)(b)(i)(1029.13.2.1) to (CC)(13)(b)(iv)(1029.13.2.4) of this rule*.

(i) **[BE] 1029.13.2.1 Treads.** Tread depths shall be not less than 11 inches (279 mm) and shall have dimensional uniformity.

**Exception:** The tolerance between adjacent treads shall not exceed 3/16 inch (4.8 mm).

(ii) **[BE] 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 (102 mm) nor more than 8 inches (203 mm) and shall be uniform within each flight.

**Exceptions:**

1. 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 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 mm), and not more than 2 inches (51 mm) wide. The edge marking stripe shall be distinctively different from the contrasting marking stripe.
2. Riser heights not exceeding 9 inches (229 mm) shall be permitted where they are necessitated by the slope of the adjacent seating areas to maintain sightlines.

(a) **[BE] 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 3/16 inch (4.8 mm). Where the stepped aisle is designed in accordance with exception 1 of *paragraph (CC)(3)(b)(ii)(1029.3.2.2) of this rule*, the stepped aisle shall be constructed so that each riser of unequal height, determined in the direction of descent, is not more than 3/16 inch (9.5 mm) in height different from adjacent risers where stepped aisle treads are less than 22 inches (560 mm) in depth and 3/8 inch (19.1 mm) in height different from adjacent risers where stepped aisle treads are 22 inches (560 mm) or greater in depth.

*Note: for copyright claim information, please see the notice on the last page of this rule.*

(iii) [BE] 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 mm), and not more than 2 inches (51 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.

(iv) [BE] 1029.13.2.4 Nosing and profile. Nosing and riser profile shall comply with *paragraphs (K)(5)(e)(1011.5.5) to (K)(5)(e)(iii)(1011.5.5.3) of this rule.*

(14) [BE] 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 without ramped or tiered floors for seating and with 200 or fewer seats, the seats shall not be required to be fastened to the floor.
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 without ramped or tiered floors for seating and with greater than 200 seats, the seats shall be fastened together in groups of not less than three or the seats shall be securely fastened to the floor.
4. 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 and seating is on tiered levels, not more than 200 seats shall not be required to be fastened to the floor. Plans showing seating, tiers and aisles shall be submitted for approval.
5. 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.
6. 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.

(15) [BE] 1029.15 Handrails. Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-*per cent* slope) and stepped aisles shall be provided with handrails in compliance with *paragraph (N)(1014) of this rule* 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 *paragraph (N)(3)(1014.3) of this rule.*
3. Handrail extensions are not required at the top and bottom of stepped aisles and ramped aisles to permit crossovers within the aisles.

*Note: for copyright claim information, please see the notice on the last page of this rule.*

(a) **[BE] 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 (559 mm) and not greater than 36 inches (914 mm), measured horizontally, and the mid-aisle handrail shall have rounded terminations or bends.

(b) **[BE] 1029.15.2 Handrail termination.** Handrails located on the side of stepped aisles shall return to a wall, guard or the walking surfaces or shall be continuous to the handrail of an adjacent stepped aisle flight.

(c) **[BE] 1029.15.3 Mid-aisle termination.** Mid-aisle handrails shall not extend beyond the lowest riser and shall terminate within 18 inches (381 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.

(d) **[BE] 1029.15.4 Rails.** Where mid-aisle handrails are provided in stepped aisles, there shall be an additional rail located approximately 12 inches (305 mm) below the handrail. The rail shall be adequate in strength and attachment in accordance with section 1607.8.1.2 of the building code as listed in rule 1301:7-7-80 of the Administrative Code.

(16) **[BE] 1029.16 Assembly guards.** Guards adjacent to seating in a building, room or space used for assembly purposes shall be provided where required by paragraph (O)(1015) of this rule and shall be constructed in accordance with paragraph (O)(1015) of this rule except where provided in accordance with paragraphs (CC)(16)(a)(1029.16.1) to (CC)(16)(d)(1029.16.4) of this rule. At bleachers, grandstands and folding and telescopic seating, guards must be provided where required by ICC 300 as listed in rule 1301:7-7-80 of the Administrative Code and paragraph (CC)(16)(a)(1029.16.1) of this rule.

(a) **[BE] 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 (1067 mm) high minimum, measured from the seatboard. Where the seats are self-rising, guard height shall be 42 inches (1067 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 paragraph (O)(2)(1015.2) of this rule.

**Exceptions:**

1. Guards that impact sightlines shall be permitted to comply with paragraph (CC)(16)(c)(1029.16.3) of this rule.
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 (102 mm)

(b) **[BE] 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 paragraph (O)(1015) of this rule.

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 mm) above the aisle floor shall be provided.

**Exception:** Where the backs of seats on the front of the cross aisle project 24 inches (610 mm) or more above the adjacent floor of the aisle, a guard need not be provided.

(c) [BE] 1029.16.3 Sightline-constrained guard heights. Unless subject to the requirements of *paragraph (CC)(16)(d)(1029.16.4) of this rule*, a fascia or railing system in accordance with the guard requirements of *paragraph (O)(1015) of this rule* and having a minimum height of 26 inches (660 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.

(d) [BE] 1029.16.4 Guards at the end of aisles. A fascia or railing system complying with the guard requirements of *paragraph (O)(1015) of this rule* 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 mm) high and shall provide a minimum 42 inches (1067 mm) measured diagonally between the top of the rail and the nosing of the nearest tread.

**(DD) Section 1030 Emergency escape and rescue**

(1) [BE] 1030.1 General. In addition to the means of egress required by this *rule*, provisions shall be made for emergency escape and rescue openings in Group R-2 occupancies in accordance with Tables 1006.3.2(1) and 1006.3.2(2) of this rule and Group R-3 occupancies. Basements and sleeping rooms below the fourth story above grade plane shall have at least one exterior emergency escape and rescue opening in accordance with this *paragraph*. Where basements 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 the basement. Such openings shall open directly into a public way or to a yard or court that opens to a public way.

**Exceptions:**

1. Basements with ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue openings.
2. Emergency escape and rescue openings are not required from basements 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. Basements without habitable spaces and having not more than 200 square feet (18.6 m<sup>2</sup>) in floor area shall not be required to have emergency escape and rescue openings.

(2) [BE] 1030.2 Minimum size. Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.53 m<sup>2</sup>).

**Exception:** The minimum net clear opening for grade-floor emergency escape and rescue openings shall be 5 square feet (0.46 m<sup>2</sup>).

(a) [BE] 1030.2.1 Minimum dimensions. The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

(3) [BE] 1030.3 Maximum height from floor. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (118 mm) measured from the floor.

(4) [BE] 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. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with *paragraph (DD)(2)(1030.2) of this rule* and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening. Where such bars, grilles, grates or similar devices are installed in existing buildings, smoke alarms shall

be installed in accordance with *paragraph (G)(2)(k)(907.2.11) of rule 1301:7-7-09 of the Administrative Code regardless of the valuation of the alteration.*

(5) [BE] 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 *paragraphs (DD)(5)(a)(1030.5.1) and (DD)(5)(b)(1030.5.2) of this rule.*

(a) [BE] 1030.5.1 Minimum size. The minimum horizontal area of the window well shall be 9 square feet (0.84 m<sup>2</sup>), with a minimum dimension of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

(b) [BE] 1030.5.2 Ladders or steps. Window wells with a vertical depth of more than 44 inches (1118 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 (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 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 mm). The ladder or steps shall not be obstructed by the emergency escape and rescue opening. Ladders or steps required by this *paragraph* are exempt from the stairway requirements of *paragraph (K)(1011) of this rule.*

**(EE) Section 1031 Maintenance of the means of egress**

(1) 1031.1 General. The means of egress for buildings or portions thereof shall be maintained in accordance with this *paragraph.*

(2) 1031.2 Reliability. Required exit accesses, exits or exit discharges shall be continuously maintained free from obstructions or impediments to full instant use in the case of fire or other emergency where the building area served by the means of egress is occupied. An exit or exit passageway shall not be used for any purpose that interferes with a means of egress.

(a) 1031.2.1 Security device. Any security device or system that emits any medium that could obscure a means of egress in any building, structure or premise shall be prohibited.

(3) 1031.3 Obstructions. A means of egress shall be free from obstructions that would prevent its use, including the accumulation of snow and ice.

(a) 1031.3.1 Group I-2. In Group I-2, the required clear width for aisles, corridors and ramps that are part of the required means of egress shall comply with *paragraph (T)(2)(1020.2) of this rule.* The facility shall have a plan to maintain the required clear width during emergency situations.

**Exception:** In areas required for bed movement, equipment shall be permitted in the required width where all the following provisions are met:

1. The equipment is low hazard and wheeled.
2. The equipment does not reduce the effective clear width for the means of egress to less than 5 feet (1525 mm).
3. The equipment is limited to:
  - 3.1 Equipment and carts in use.
  - 3.2 Medical emergency equipment.

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3.3 Infection control carts.

3.4 Patient lift and transportation equipment.

4. Medical emergency equipment and patient lift and transportation equipment, when not in use, is required to be located on one side of the corridor.
5. The equipment is limited in number to a maximum of one per patient sleeping room or patient care room within each smoke compartment.

(4) [BE] 1031.4 Exit signs. Exit signs shall be installed and maintained in accordance with *paragraph (M)(1013) of this rule*. Decorations, furnishings, equipment or adjacent signage that impairs the visibility of exit signs, creates confusion or prevents identification of the exit shall not be allowed.

(5) 1031.5 Nonexit identification. Where a door is adjacent to, constructed similar to and can be confused with a means of egress door, that door shall be identified with an approved sign that identifies the room name or use of the room.

(6) 1031.6 Finishes, furnishings and decorations. Means of egress doors shall be maintained in such a manner as to be distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Furnishings, decorations or other objects shall not be placed so as to obstruct exits, access thereto, egress therefrom, or visibility thereof. Hangings and draperies shall not be placed over exit doors or otherwise be located to conceal or obstruct an exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit.

(7) 1031.7 Emergency escape and rescue openings. Required emergency escape and rescue openings shall be maintained in accordance with the code in effect at the time of construction, and the following: Required emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates or similar devices are allowed to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with the code that was in effect at the time of construction and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the emergency escape and rescue opening.

(8) 1031.8 Inspection, testing and maintenance. All two-way communication systems for areas of refuge shall be inspected and tested on a yearly basis to verify that all components are operational. When required, the tests shall be conducted in the presence of the fire code official. Records of inspection, testing and maintenance shall be maintained.

(9) 1031.9 Floor identification signs. The floor identification signs required by *paragraphs (W)(9)(1023.9) of this rule* and *(D)(24)(1104.24) of rule 1301:7-7-11 of the Administrative Code* shall be maintained in an approved manner.



Replaces: 1301:7-7-10  
 Effective: 1/5/2019  
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## CERTIFIED ELECTRONICALLY

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