

## **MEANS OF EGRESS - COMPONENTS**

### **Means of Egress - Definition**

The fundamental purpose for a means of egress is to get all of the occupants out of a building in a safe and expeditious manner during a fire or other emergency. Means of egress is a continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the *exit access*, the *exit* and the *exit discharge*.

### **General Egress Requirements**

General egress requirements apply to all three elements of means of egress system and include following components per Section 1003:

- *Ceiling height* – 7'-6" minimum
- *Protruding objects* – 4" maximum protrusions above 27" height and required protrusion below 27" of height where ceiling height is below 80"
- *Elevation changes* – for slopes more than 1:20 accessible ramp provisions apply, any level changes less than 12" need to be sloped, and slopes of less than 6" are required to have handrails and contrast flooring
- *Continuous width*
- *Elevators, escalators and moving walks are not allowed (there are exceptions)*

### **Occupant Load**

Occupant Load is the number of persons for which the means of egress of a building or portion thereof is designed which is determined by Table 1004.1.1. These requirements apply to outdoor areas as well.

**Gross Floor Area** is area inside perimeter of exterior walls, exclusive of vent shafts and courts.

**Net Floor Area** is actual occupied area not including unoccupied accessory areas such as corridors, stairways, toilet rooms, mechanical rooms and closets.

### **Egress Width**

Means of egress width shall not be less than required by Section 1005, which is occupant load multiplied by 0.3 for stairs and occupant load multiplied by 0.2 for all other egress components. Any single exit shall not support more than 50% of required egress width, unless only one exit is required.

### **Exit Access**

Exit Access is the portion of a means of egress system that leads from any occupied area to an exit and is defined through Section 1014.

**Common Path of Egress Travel** is portion of exit access that occupants are required to transverse before two separate and distinct paths of egress travel to two exits are available.

**Exit Access Travel Distance** is maximum travel distance from most remote point within a story along the natural and unobstructed path of egress travel to an exit as defined in Table 1016.1.

**Aisle** is an unenclosed exit access component that defines and provides a path of egress travel. Aisles are required from all occupied portions of the exit access which contain seats, tables, furnishings, displays and similar fixtures or equipment.

**Corridor** is an enclosed exit access component that defines and provides a path of egress travel to an exit and is fire-resistance-rated in compliance with Table 1018.1.

## **Exit**

Exit is that portion of a means of egress system which is separated from other interior spaces of a building by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between exit access and exit discharge and is continuous from point of entry to point of discharge. Exits include exterior exit doors at level of discharge, vertical exit enclosures, exit passageways, exterior exit stairs and ramps and horizontal exits and are defined through Section 1020. Number of required exits is defined in Table 1021.1.

**Exit Enclosure** is an exit component that provides for a protected path of travel in a vertical or horizontal direction to the exit discharge or the public way.

**Horizontal Exit** is path of egress travel from one building to an area in another building on the approximately same level or through or around a wall or partition to an area on approximately same level in the same building which affords safety from fire and smoke from area of incidence and communicating areas.

**Exit Passageway** is an exit component that provides for a protected path of travel in a horizontal direction to the exit discharge or the public way.

## **Exit Discharge**

Exit Discharge is that portion of a means of egress system between the termination of an exit and a public way and is defined by Section 1027.

## **SECTION 1001 ADMINISTRATION**

### **1001.1 General.**

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

### **1001.2 Minimum requirements.**

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

### **1001.3 Maintenance.**

Means of egress shall be maintained in accordance with the California Fire Code. [F]

## **SECTION 1002 DEFINITIONS**

### **1002.1 Definitions.**

The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**AISLE.** An unenclosed exit access component that defines and provides a path of egress travel.

**AISLE ACCESSWAY.** That portion of an exit access that leads to an aisle.

**ALTERNATING TREAD DEVICE.** A device that has a series of steps between 50 and 70 degrees (0.87 and 1.22 rad) from horizontal, usually attached to a center support rail in an alternating manner so that the user does not have both feet on the same level at the same time.

**AREA OF REFUGE.** An area where persons unable to use stairways can remain temporarily to await instructions or assistance during emergency evacuation.

**BLEACHERS.** Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Grandstands").

**COMMON PATH OF EGRESS TRAVEL.** That portion of exit access which the occupants are required to traverse before two separate and distinct paths of egress travel to two exits are available. Paths that merge are common paths of travel. Common paths of egress travel shall be included within the permitted travel distance.

**CORRIDOR.** An enclosed exit access component that defines and provides a path of egress travel to an exit.

**DOOR, BALANCED.** A door equipped with double-pivoted hardware so designed as to cause a semicounter balanced swing action when opening.

**EGRESS COURT.** A court or yard which provides access to a public way for one or more exits.

**EMERGENCY ESCAPE AND RESCUE OPENING.** An operable window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

**EXIT.** That portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge. Exits include exterior exit doors at the level of exit discharge, vertical exit enclosures, exit passageways, exterior exit stairways, exterior exit ramps and horizontal exits.

**EXIT ACCESS.** That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit.

**EXIT ACCESS DOORWAY.** A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, corridor, unenclosed exit access stair or unenclosed exit access ramp.

**EXIT DISCHARGE.** That portion of a means of egress system between the termination of an exit and a public way.

**EXIT DISCHARGE, LEVEL OF.** The story at the point at which an exit terminates and an exit discharge begins.

**EXIT ENCLOSURE.** An exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a vertical or horizontal direction to the exit discharge or the public way.

**EXIT, HORIZONTAL.** A path of egress travel from one building to an area in another building on approximately the same level, or a path of egress travel through or around a wall or partition to an area on approximately the same level in the same building, which affords safety from fire and smoke from the area of incidence and areas communicating therewith.

**EXIT PASSAGEWAY.** An exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives,

and provides for a protected path of egress travel in a horizontal direction to the exit discharge or the public way.

**FIRE EXIT HARDWARE.** Panic hardware that is listed for use on fire door assemblies.

**FLIGHT.** A continuous run of rectangular treads, winders or combination thereof from one landing to another.

**FLOOR AREA, GROSS.** The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction for corridors, stairways, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts.

**FLOOR AREA, NET.** The actual occupied area not including unoccupied accessory areas such as corridors, stairways, toilet rooms, mechanical rooms and closets.

**FOLDING AND TELESCOPIC SEATING.** Tiered seating having an overall shape and size that is capable of being reduced for purposes of moving or storing and is not a building element.

**GRANDSTAND.** Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Bleachers").

**GUARD ([DSA-AC, HCD 1 & HCD 2] or GUARDRAIL).** A building component or a system of building components located at or near the open sides of elevated walking surfaces that minimizes the possibility of a fall from the walking surface to a lower level.

**HANDRAIL.** A horizontal or sloping rail intended for grasping by the hand for guidance or support.

**MEANS OF EGRESS.** A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.

**MERCHANDISE PAD.** A merchandise pad is an area for display of merchandise surrounded by aisles, permanent fixtures or walls. Merchandise pads contain elements such as nonfixed and moveable fixtures, cases, racks, counters and partitions as indicated in Section 105.2 from which customers browse or shop.

**NOSING.** The leading edge of treads of stairs and of landings at the top of stairway flights.

**OCCUPANT LOAD.** The number of persons for which the means of egress of a building or portion thereof is designed.

**PANIC HARDWARE.** A door-latching assembly incorporating a device that releases the latch upon the application of a force in the direction of egress travel.

**PHOTOLUMINESCENT.** Having the property of emitting light that continues for a length of time after excitation by visible or invisible light has been removed.

**PUBLIC WAY.** A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet (3048 mm).

**RAMP.** A walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

**SCISSOR STAIR.** Two interlocking stairways providing two separate paths of egress located within one stairwell enclosure.

**SELF-LUMINOUS.** Illuminated by a self-contained power source, other than batteries, and operated independently of external power sources.

**SMOKE-PROTECTED ASSEMBLY SEATING.** Seating served by means of egress that is not subject to smoke accumulation within or under a structure.

**STAIR.** A change in elevation, consisting of one or more risers.

**STAIRWAY.** One or more flights of stairs, either exterior or interior, with the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one level to another.

**STAIRWAY, EXTERIOR.** A stairway that is open on at least one side, except for required structural columns, beams, handrails and guards. The adjoining open areas shall be either yards, courts or public ways. The other sides of the exterior stairway need not be open.

**STAIRWAY, INTERIOR.** A stairway not meeting the definition of an exterior stairway.

**STAIRWAY, SPIRAL.** A stairway having a closed circular form in its plan view with uniform section-shaped treads attached to and radiating from a minimum-diameter supporting column.

**SUITE.** A group of patient treatment rooms or patient sleeping rooms within Group I-2 occupancies where staff are in attendance within the suite, for supervision of all patients within the suite and the suite is in compliance with the requirements of Sections 1014.2.2

through 1014.2.7.

WINDER. A tread with nonparallel edges.

## **SECTION 1003 GENERAL MEANS OF EGRESS**

### **1003.1 Applicability.**

The general requirements specified in Sections 1003 through 1013 shall apply to all three elements of the means of egress system, in addition to those specific requirements for the exit access, the exit and the exit discharge detailed elsewhere in this chapter.

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

#### **Exceptions:**

1. Sloped ceilings in accordance with Section 1208.2.
2. Ceilings of dwelling units and sleeping units within residential occupancies in accordance with Section 1208.2.
3. Allowable projections in accordance with Section 1003.3.
4. Stair headroom in accordance with Section 1009.2.
5. Door height in accordance with Section 1008.1.1.
6. Ramp headroom in accordance with Section 1010.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas in parking garages in accordance with Section 406.2.2. [HCD 1-AC] The clear height of vehicle and pedestrian areas required to be accessible, or identified as accessible, shall comply with Chapter 11A or Chapter 11B, as applicable.
8. Areas above and below mezzanine floors in accordance with Section 505.1.
9. In Group I-2, I-2.1 and I-3 occupancies, the means of egress shall have a ceiling height of not less than 8 feet (2439mm).

### **1003.3 Protruding objects.**

Protruding objects shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.

**Exception:** In Group I-2 and Group I-2.1 occupancies, protruding objects shall not extend more than 12 inches (305 mm) below the minimum ceiling height required by Section 1003.2.

#### **1003.3.1 Headroom.**

Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 provided a minimum headroom of 80 inches (2032 mm) shall be provided for any walking surface, including walks, corridors, aisles and passageways. Not more than 50 percent of the ceiling area of a means of egress shall be reduced in height by protruding objects.

**Exception:** Door closers and stops shall not reduce headroom to less than 78 inches (1981 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.

### **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 (686 mm) maximum or 80 inches (2032 mm) minimum above the finished floor or ground.

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

### **1003.3.3 Horizontal projections.**

Structural elements, fixtures or furnishings shall not project horizontally from either side more than 4 inches (102 mm) over any walking surface between the heights of 27 inches (686 mm) and 80 inches (2032 mm) above the walking surface.

**Exception:** Handrails are permitted to protrude 4 1/2 inches (114 mm) from the wall.

### **1003.3.4 Clear width.**

Protruding objects shall not reduce the minimum clear width of accessible routes as required in Chapter 11A or Chapter 11B, Section 1133B.8.6.

### **1003.4 Floor surface.**

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

### **1003.5 Elevation change.**

Where changes in elevation of less than 12 inches (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-percent slope), ramps complying with Section 1010 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, R-3, S and U at exterior doors not required to be accessible by Chapter 11A or 11B.
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 11A or 11B, provided that the risers and treads comply with Section 1009.4, the minimum depth of the tread is 13 inches (330 mm) and



at least one handrail complying with Section 1012 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 11A or 11B, provided that the risers and treads comply with Section 1028.11 and the aisle is provided with a handrail complying with Section 1028.13.

Throughout a story in a Group I-2 and Group I-2.1 occupancies, any change in elevation in portions of the exit access that serve nonambulatory persons shall be by means of a ramp or sloped walkway.

### **1003.6 Means of egress continuity.**

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

### **1003.7 Elevators, escalators and moving walks.**

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

**Exception:** Elevators used as an accessible means of egress in accordance with Section 1007.4.

## ***SECTION 1004 OCCUPANT LOAD***

### **1004.1 Design occupant load.**

In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be determined in accordance with this section. Where occupants from accessory areas egress through a primary space, the calculated occupant load for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory area.

#### **1004.1.1 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 1004.1.1. For areas without fixed seating, the occupant load shall not be less than that number determined by dividing the floor area under consideration by the occupant per unit of area factor assigned to the occupancy as set forth in Table 1004.1.1. Where an intended use is not listed in Table 1004.1.1, the building official shall establish a use based on a listed use that most nearly resembles the intended use.

**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.

**TABLE 1004.1.1 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Assembly with fixed seats	See Section 1004.7
Assembly without fixed seats	
Concentrated (chairs only-not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms-other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Laboratory	
Educational	50 net
Laboratories, non-educational	100 net
Laboratory suitea	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mercantile	

Areas on other floors	60 gross
Basement and grade floor areas	30 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Warehouses	500 gross

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

a. See Section 443.2.

### **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 1004.1.1, provided that all other requirements of the code are also 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 building official, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the building official, such diagram shall be posted.

### **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 authorized agent.

### **1004.4 Exiting from multiple levels.**

Where exits serve more than one floor, only the occupant load of each floor considered individually shall be used in computing the required capacity of the exits at that floor, provided that the exit capacity shall not decrease in the direction of egress travel.

### **1004.5 Egress convergence.**

Where means of egress from floors above and below converge at an intermediate level, the capacity of the means of egress from the point of convergence shall not be less than the sum of the two floors.

### **1004.6 Mezzanine levels.**

The occupant load of a mezzanine level with egress onto a room or area below shall be added to that room or area's occupant load, and the capacity of the exits shall be designed for the total occupant load thus established.

### **1004.7 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 and wheelchair spaces, shall be determined in accordance with Section 1004.1.1 and added to the number of fixed seats.

For areas having fixed seating without dividing arms, the occupant load shall not be 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.

### **1004.8 Outdoor areas.**

Yards, patios, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be assigned by the building official 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.

#### **Exceptions:**

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

### **1004.9 Multiple occupancies.**

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

## ***SECTION 1005 EGRESS WIDTH***

### **1005.1 Minimum required egress width.**

The means of egress width shall not be less than required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.3 inches (7.62 mm) per occupant for stairways and by 0.2 inches (5.08 mm) per occupant for other egress components. The width shall not be less than specified elsewhere in this code. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.

**Exceptions:**

1. Means of egress complying with Section 1028.
2. For Group H-1, H-2, H-3 and H-4 occupancies the total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.7 inches (7.62 mm) per occupant for stairways and by 0.4 inches (5.08 mm) per occupant for other egress components.

**1005.2 Door encroachment.**

Doors, when fully opened, and handrails shall not reduce the required means of egress width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width a maximum of 1 1/2 inches (38 mm) on each side.

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

**SECTION 1014 EXIT ACCESS**

**1014.1 General.**

The exit access shall comply with the applicable provisions of Sections 1003 through 1013. Exit access arrangement shall comply with Sections 1014 through 1019.

**1014.2 Egress through intervening spaces.**

Egress through intervening spaces shall comply with this section.

1. 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 when the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

2. An exit access shall not pass through a room that can be locked to prevent egress.
3. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.
4. 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 when all of the following are met:
- 2.1. The stock is of the same hazard classification as that found in the main retail area;
  - 2.2. Not more than 50 percent of the exit access is through the stockroom;
  - 2.3. The stockroom is not subject to locking from the egress side; and
  - 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.
5. Exits shall not pass through any room subject to locking except in Group I-3 occupancies classified as detention facilities.

#### **1014.2.1 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 percent of the area of the larger tenant space through which they pass; are the same or similar occupancy group; a discernable 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.

#### **1014.3 Common path of egress travel.**

In occupancies other than Groups H-1, H-2 and H-3, the common path of egress travel shall not exceed 75 feet (22 860 mm). In Group H-1, H-2 and H-3 occupancies, the common path of egress travel shall not exceed 25 feet (7620 mm). For common path of egress travel in Group A occupancies and assembly occupancies accessory to Group E occupancies having fixed seating, see Section 1028.8.

#### **Exceptions:**

1. The length of a common path of egress travel in Group B, F and S occupancies shall not be more than 100 feet (30 480 mm), provided that the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
2. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet (30 480 mm).
3. The length of a common path of egress travel in a Group I-3 occupancy shall not be more than 100 feet (30 480 mm).
4. The length of a common path of egress travel in a Group R-2 occupancy shall not be more than 125 feet (38 100 mm), provided that the building is protected throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

5. Suites in a Group I-2 occupancy constructed in accordance with Section 1014.2.3 or 1014.2.4.

## **SECTION 1015 EXIT AND EXIT ACCESS DOORWAYS**

### **1015.1 Exits or exit access doorways from spaces.**

Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

**Exception:** Group I-2 occupancies shall comply with Section 1014.2.2 through 1014.2.7.

1. The occupant load of the space exceeds one of the values in Table 1015.1.

**Exception:** 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 Section 903.3.1.1 or 903.3.1.2.

2. The common path of egress travel exceeds one of the limitations of Section 1014.3.

3. Where required by Section 1015.3, 1015.4, 1015.5, 1015.6 or 1015.6.1.

4. In detention and correctional facilities and holding cells, such as are found in courthouse buildings, a minimum of two means of egress shall be provided when the occupant load is more than 20.

Where a building contains mixed occupancies, each individual occupancy shall comply with the applicable requirements for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.

**TABLE 1015.1 SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY**

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E <sup>a</sup> , F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-2.1, I-3, I-4, R	10
S	29
L	See Section 443.6.1

a. Day care maximum occupant load is 10.

## **1015.2 Exit or exit access doorway arrangement.**

Required exits shall be located in a manner that makes their availability obvious. Exits shall be unobstructed at all times. Exit and exit access doorways shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.

### **1015.2.1 Two exits or exit access doorways.**

Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways 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 exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway.

#### **Exceptions:**

1. Where exit enclosures are provided as a portion of the required exit and are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1018, 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 Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

### **1015.2.2 Three or more exits or exit access doorways.**

Where access to three or more exits is required, at least two exit doors or exit access doorways shall be arranged in accordance with the provisions of Section 1015.2.1.

## **SECTION 1016 EXIT ACCESS TRAVEL DISTANCE**

### **1016.1 Travel distance limitations.**

Exits shall be so located on each story such that the maximum length of exit access travel, measured from the most remote point within a story along the natural and unobstructed path of egress travel to an exterior exit door at the level of exit discharge, an entrance to a vertical exit enclosure, an exit passageway, a horizontal exit, an exterior exit stairway or an exterior exit ramp, shall not exceed the distances given in Table 1016.1.

#### **Exceptions:**

1. Travel distance in open parking garages is permitted to be measured to the closest riser of open exit stairways.
2. In outdoor facilities with open exit access components and open exterior exit stairways or exit ramps, travel distance is permitted to be measured to the closest riser of an exit stairway or the closest slope of the exit ramp.
3. In other than occupancy Groups H and I, the exit access travel distance to a maximum of 50 percent of the exits is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps when connecting a



maximum of two stories. The two connected stories shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories.

4. In other than occupancy Groups H and I, exit access travel distance is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps in the first and second stories above grade plane in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The first and second stories above grade plane shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories.

Where applicable, travel distance on unenclosed exit access stairways or ramps and on connecting stories shall also be included in the 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 stairway.

**TABLE 1016.1 EXIT ACCESS TRAVEL DISTANCE <sup>a</sup>**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250 <sup>b</sup>
R-2.1	Not Permitted	250 <sup>c</sup>
B	200	300 <sup>c</sup>
F-2, S-2, U	300	400 <sup>c</sup>
H-1	Not Permitted	75 <sup>c</sup>
H-2	Not Permitted	100 <sup>c</sup>
H-3	Not Permitted	150 <sup>c</sup>
H-4	Not Permitted	175 <sup>c</sup>
H-5	Not Permitted	200 <sup>c</sup>
I-2, I-2.1, I-3 <sup>d</sup> , I-4	Not Permitted	200 <sup>c</sup>
L	Not Permitted	200 <sup>c</sup>

For SI: 1 foot = 304.8 mm.

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

Section 402.4: For the distance limitation in malls.

Section 404.9: For the distance limitation through an atrium space.

Section 407.4: For the distance limitation in Group I-2.

Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.

Section 411.4: For the distance limitation in special amusement buildings.

Section 1014.2.2: For the distance limitation in Group I-2 hospital suites.

Section 1015.4: For the distance limitation in refrigeration machinery rooms.

Section 1015.5: For the distance limitation in refrigerated rooms and spaces.

Section 1021.2: For buildings with one exit.

Section 1028.7: For increased limitation in assembly seating.

Section 1028.7: For increased limitation for assembly open-air seating.

Section 3103.4: For temporary structures.

Section 3104.9: For pedestrian walkways.

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

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

d. Not permitted in nonsprinklered Group I-3 occupancies.

## **SECTION 1017 AISLES**

*[DSA-AC] In addition to the requirements of this section, means of egress, which provide access to, or egress from, buildings or facilities where accessibility is required for applications listed in Section 1.9.1 regulated by the Division of the State Architect-Access Compliance, shall also comply with Chapter 11A or Chapter 11B, Sections 1133B.4.1 or 1133B.5.5, as applicable.*

### **1017.1 General.**

Aisles serving as a portion of the exit access in the means of egress system shall comply with the requirements of this section. Aisles shall be provided from all occupied portions of the exit access which contain seats, tables, furnishings, displays and similar fixtures or equipment. Aisles serving assembly areas shall comply with Section 1028. Aisles serving reviewing stands, grandstands and bleachers shall also comply with Section 1028. The required width of aisles shall be unobstructed.

**Exception:** Doors complying with Section 1005.2.

### **1017.2 Aisles in Groups B and M.**

In Group B and M occupancies, the minimum clear aisle width shall be determined by Section 1005.1 for the occupant load served, but shall not be less than 36 inches (914 mm).

**Exception:** Nonpublic aisles serving less than 50 people and not required to be accessible by Chapter 11B (see Sections 1103B.1, Exception 2 and 1123B.2, Exception) need not exceed 28 inches (711 mm) in width.

### **1017.3 Aisle accessways in Group M.**

An aisle accessway shall be provided on at least 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 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 travel shall not exceed 75 feet (22 880 mm).

### **1017.4 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 aisle or aisle accessways, the clear width shall be measured to walls, edges of seating and tread edges, except that handrail projections are permitted.

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

## ***SECTION 1018 CORRIDORS***

### **1018.1 Construction.**

Corridors shall be fire-resistance rated in accordance with Table 1018.1. The corridor walls required to be fire-resistance rated shall comply with Section 709 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 at least one door opening directly to the exterior and rooms for assembly purposes have at least 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 or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1015.1.

5. A fire-resistance rating is not required for corridors within suites in a Group I-2 occupancy provided with an automatic sprinkler system throughout and constructed in accordance with Section 1014.2.3 or 1014.2.4.

**TABLE 1018.1 CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system <sup>c</sup>
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5, <i>L</i>	Greater than 30	Not Permitted	1
A <sup>d</sup> , B, F, M, S, U	Greater than 30	1	0
<i>R-1, R-2, R-3, R-3.1, R-4</i>	Greater than 10	Not Permitted	1
I-2 <sup>a</sup> , <i>I-2.1, I-4</i>	<i>Greater than 6</i>	Not Permitted	1
<i>I-3, R-2.1</i>	<i>Greater than 6</i>	Not Permitted	1 <sup>b</sup>
<i>E</i>	<i>Greater than 10</i>	1	1

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

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

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

d. [SFM] See Section 1028.

1018.2 Corridor width. The minimum corridor width shall be as determined in Section 1005.1, but not less than 44 inches (1118 mm).

**Exceptions:**

1. Twenty-four inches (610 mm)-For access to and utilization of electrical, mechanical or plumbing systems or equipment.
2. Thirty-six inches (914 mm)-With a required occupant capacity of less than 50.
3. Thirty-six inches (914 mm)-Within a dwelling unit.
4. Seventy-two inches (1829 mm)-In Group E with a corridor having a required capacity of 100 or more.
5. Seventy-two inches (1829 mm)-In corridors and areas serving gurney traffic in occupancies where patients receive outpatient medical care, which causes the patient to be not capable of self-preservation.
6. Ninety-six inches (2438 mm)-In Group I-2 in areas where required for bed movement or corridors in Group I-2 and I-3 occupancies serving any area caring for one or more nonambulatory persons.

**1018.3 Corridor obstruction.**

The required width of corridors shall be unobstructed.

**Exception:** Doors complying with Section 1005.2.

#### **1018.4 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:**

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, E, F, M, R-1, R-2, R-2.1, R-4, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm).
3. 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.

#### **1018.5 Air movement in corridors.**

Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

##### **Exceptions:**

1. Use of a corridor as a source of makeup air for exhaust systems in small rooms of 30 square feet or less that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms and janitor closets, shall 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 health care facilities, provided that the corridor is not the primary source of supply or return to the room.
5. *For health care facilities under the jurisdiction of the Office of Statewide Health Planning and Development (OSHPD), see the California Mechanical Code.*

#### **1018.6 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.

##### **Exceptions:**

1. Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.
2. *[SFM] In fully sprinklered office buildings, corridors may lead through enclosed elevator lobbies if all areas of the building have access to at least one required exit without passing through the elevator lobby.*

## ***SECTION 1019 EGRESS BALCONIES***

### **1019.1 General.**

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

### **1019.2 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 at least two stairs and a dead-end travel condition does not require travel past an unprotected opening to reach a stair.

### **1019.3 Openness.**

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

## ***SECTION 1020 EXITS***

### **1020.1 General.**

Exits shall comply with Sections 1020 through 1026 and the applicable requirements of Sections 1003 through 1013. 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.

### **1020.2 Exterior exit doors.**

Buildings or structures used for human occupancy shall have at least one exterior door that meets the requirements of Section 1008.1.1.

#### **1020.2.1 Detailed requirements.**

Exterior exit doors shall comply with the applicable requirements of Section 1008.1.

#### **1020.2.2 Arrangement.**

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

## **SECTION 1021 NUMBER OF EXITS AND CONTINUITY**

### **1021.1 Exits from stories.**

All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1021.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories.

#### **Exceptions:**

1. As modified by Section 403.5.2.
2. As modified by Section 1021.2.
3. Exit access stairways and ramps that comply with Exception 3 or 4 of Section 1016.1 shall be permitted to provide the minimum number of approved independent exits required by Table 1021.1 on each story.
4. 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 Section 903.3.1.1 or 903.3.1.2.
5. Within a story, rooms and spaces complying with Section 1015.1 with exits that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit.

**TABLE 1021.1 MINIMUM NUMBER OF EXITS FOR OCCUPANT LOAD**

<b>OCCUPANT LOAD (persons per story)</b>	<b>MINIMUM NUMBER OF EXITS (per story)</b>
1-500	2
501-1,000	3
More than 1,000	4

#### **1021.1.1 Exits maintained.**

The required number of exits from any story shall be maintained until arrival at grade or the public way.

#### **1021.1.2 Parking structures.**

Parking structures shall not have less than two exits from each parking tier, except that only one exit is required where vehicles are mechanically parked. Vehicle ramps shall not be considered as required exits unless pedestrian facilities are provided.

#### **1021.1.3 Helistops.**

The means of egress from helistops shall comply with the provisions of this chapter, provided that landing areas located on buildings or structures shall have two or more exits. For landing platforms or roof areas less than 60 feet (18 288 mm) long, or less than 2,000 square feet (186 m<sup>2</sup>) in area, the second means of egress is permitted to be a fire escape, alternating tread device or ladder leading to the floor below.

### 1021.2 Single exits.

Occupancies shall be permitted to have a single exit in buildings otherwise required to have more than one exit if the areas served by the single exit do not exceed the limitations of Table 1021.2. Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1021.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of **Section 1004.1**.

Basements with a single exit shall not be located more than one story below grade plane.

**TABLE 1021.2 STORIES WITH ONE EXIT**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
First story or basement	A, B <sup>d</sup> , E <sup>e</sup> , F <sup>d</sup> , M, U <sup>d</sup> , S <sup>d</sup>	49 occupants and 75 feet travel distance
	H-2, H-3,L	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S <sup>a</sup>	29 occupants and 100 feet travel distance
	I-2, I-2.1	7 occupants and 50 feet travel distance
Second story	B <sup>b</sup> , F, M, S <sup>a</sup>	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2 <sup>c</sup>	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.

- a. For the required number of exits for parking structures, see Section 1021.1.2.
- b. For the required number of exits for air traffic control towers, see Section 412.3.
- c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
- d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
- e. Day care occupancies shall have a maximum occupant load of 10.

### 1021.3 Exit continuity.

Exits shall be continuous from the point of entry into the exit to the exit discharge.

### 1021.4 Exit door arrangement.

Exit door arrangement shall meet the requirements of Sections 1015.2 through 1015.2.2.



## **SECTION 1022 EXIT ENCLOSURES**

### **1022.1 Enclosures required.**

Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both. Exit 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 exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. Exit enclosures shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An exit enclosure shall not be used for any purpose other than means of egress.

#### **Exceptions:**

1. In all occupancies, other than Group H, I and R-2.1 occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.
  - 1.1. The stairway is open to not more than one story above its level of exit discharge; or
  - 1.2. The stairway is open to not more than one story below its level of exit discharge.
2. Exits in buildings of Group A-5 where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
4. Stairways in open parking structures that serve only the parking structure are not required to be enclosed.
5. Stairways in Group I-3 occupancies, as provided for in Section 408.3.8.1, are not required to be enclosed.
6. Means of egress stairways as required by Sections 410.5.3 and 1015.6.1 are not required to be enclosed.
7. Means of egress stairways from balconies, galleries or press boxes as provided for in Section 1028.5.1 are not required to be enclosed.
8. Fixed guideway transit stations, constructed in accordance with Section 433.

### **1022.2 Termination.**

Exit enclosures shall terminate at an exit discharge or a public way.

**Exception:** An exit enclosure shall be permitted to terminate at an exit passageway complying with Section 1023, provided the exit passageway terminates at an exit discharge or a public way.

### **1022.3 Openings and penetrations.**

Exit enclosure opening protectives shall be in accordance with the requirements of Section 715.

Openings in exit enclosures 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 an exit enclosure.

### **1022.4 Penetrations.**

Penetrations into and openings through an exit enclosure are prohibited except for required exit doors, equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication systems and electrical raceway serving the exit enclosure 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 713. There shall be no penetrations or communication openings, whether protected or not, between adjacent exit enclosures.

### **1022.5 Ventilation.**

Equipment and ductwork for exit enclosure ventilation as permitted by Section 1022.4 shall comply with one of the following items:

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

In each case, openings into the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by opening protectives in accordance with Section 715 for shaft enclosures.

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

### **1022.6 Exit enclosure exterior walls.**

Exterior walls of an exit enclosure shall comply with the requirements of Section 705 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the stairway and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction

shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or to the roof line, whichever is lower.

### **1022.7 Discharge identification.**

A stairway in an exit enclosure shall not continue below its level of exit discharge unless an approved barrier is provided at the level of exit discharge to prevent persons from unintentionally continuing into levels below. Directional exit signs shall be provided as specified in Section 1011.

### **1022.8 Floor identification signs.**

A sign shall be provided at each floor landing in exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the exit enclosure and the identification of the stair 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 enclosure 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.

Tactile floor identification signs that comply with Section 1117B.5.1 Item 1 shall be located at the landing of each floor level, placed adjacent to the door on the latch side, in all enclosed stairways in buildings two or more stories in height to identify the floor level. At the exit discharge level, the sign shall include a raised five pointed star located to the left of the identifying floor level. The outside diameter of the star shall be the same as the height of the raised characters.

### **1022.9 Smokeproof enclosures and pressurized stairways.**

In buildings required to comply with Section 403 or 405, each of the exit enclosures shall be a smokeproof enclosure or pressurized stairway in accordance with Section 909.20.

#### **1022.9.1 Termination and extension.**

A smokeproof enclosure or pressurized stairway shall terminate at an exit discharge or a public way. The smokeproof enclosure or pressurized stairway shall be permitted to be extended by an exit passageway in accordance with Section 1022.2. The exit passageway shall be without openings other than the fire door assembly required by Section 1022.2 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 or horizontal assemblies constructed in accordance with Section 712, 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 or pressurized stairway from the exit passageway is not required, provided the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure or pressurized stairway.

3. A smokeproof enclosure or pressurized stairway shall be permitted to egress through areas on the level of discharge or vestibules as permitted by Section 1027.

**1022.9.2 Enclosure access.**

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

## **SECTION 1023 EXIT PASSAGEWAYS**

**1023.1 Exit passageway.**

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

**1023.2 Width.**

The width of exit passageways shall be determined as specified in Section 1005.1 but such width shall not be less than 44 inches (1118 mm), except that exit passageways serving an occupant load of less than 50 shall not be less than 36 inches (914 mm) in width. The required width of exit passageways shall be unobstructed.

**Exception:** Doors complying with Section 1005.2.

The clear width of exit passageways in a Group I-2 occupancy used for the movement of beds and litters shall be 44-inch (1118) minimum.

**1023.3 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 exit enclosure. Exit passageways shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both.

**1023.4 Termination.**

Exit passageways shall terminate at an exit discharge or a public way.

**1023.5 Openings and penetrations.**

Exit passageway opening protectives shall be in accordance with the requirements of Section 715.

Except as permitted in Section 402.4.6, openings in exit passageways other than 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 exit enclosure is extended to an exit discharge or a public way by an exit passageway, the exit passageway shall also comply with Section 1022.2.1.

Elevators shall not open into an exit passageway.

### **1023.6 Penetrations.**

Penetrations into and openings through an exit passageway are prohibited except for required exit doors, 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 713. There shall be no penetrations or communicating openings, whether protected or not, between adjacent exit passageways.

## ***SECTION 1025 HORIZONTAL EXITS***

### **1025.1 Horizontal exits.**

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

#### **Exceptions:**

1. Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.
2. Horizontal exits are permitted to comprise 100 percent of the exits required for occupancies in Group I-3. At least 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.

### **1025.2 Separation.**

The separation between buildings or refuge areas connected by a horizontal exit shall be provided by a fire wall complying with Section 706; or it shall be provided by a fire barrier complying with Section 707 or a horizontal assembly complying with Section 712, or both. The minimum fire-resistance rating of the separation shall be 2 hours. Opening protectives in horizontal exits shall also comply with Section 715. Duct and air transfer openings in a fire wall or fire barrier that serves as a horizontal exit shall also comply with Section 716. The horizontal exit separation shall extend vertically through all levels of the building unless floor assemblies have a fire-resistance rating of not less than 2 hours with no unprotected openings.

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

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

### **1025.3 Opening protectives.**

Fire doors in horizontal exits shall be self-closing or automatic-closing when activated by a smoke detector in accordance with Section 715.4.8.3. Doors, where located in a cross-corridor condition, shall be automatic-closing by activation of a smoke detector installed in accordance with Section 715.4.8.3.

### **1025.4 Capacity of 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. 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.

**Exception:** 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.*

The refuge area into which a horizontal exit leads shall be provided with exits adequate to meet the occupant requirements of this chapter, but not including the added occupant load imposed by persons entering it through horizontal exits from other areas. At least one refuge area exit shall lead directly to the exterior or to an exit enclosure.

**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.

## **SECTION 1026 EXTERIOR EXIT RAMPS AND STAIRWAYS**

### **1026.1 Exterior exit ramps and stairways.**

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

**Exception:** Exterior exit ramps and stairways for outdoor stadiums complying with Section 1022.1, Exception 2.

### **1026.2 Use in a means of egress.**

*Exterior exit stairways shall not be used as an element of a required means of egress for Group I-2 occupancies. For occupancies in other than Group I-2, exterior exit ramps and stairways shall be permitted as an element of a required means of egress for buildings not exceeding six stories above grade plane or buildings defined as a high-rise or Group I-2 occupancies having occupied floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.*

### **1026.3 Open side.**

Exterior exit ramps and stairways serving as an element of a required means of egress shall be open on at least one side. An open side shall have a minimum of 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.

### **1026.4 Side yards.**

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

### **1026.5 Location.**

Exterior exit ramps and stairways shall be located in accordance with Section 1027.3.

### **1026.6 Exterior ramps and stairway protection.**

Exterior exit ramps and stairways shall be separated from the interior of the building as required in Section 1022.1. Openings shall be limited to those necessary for egress from normally occupied spaces.

#### **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 no 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 ramp or stairway 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 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the openings no less than 7 feet (2134 mm) above the top of the balcony.
3. Separation from the interior of the building is not required for an exterior ramp or stairway located in a building or structure that is permitted to have unenclosed interior stairways in accordance with Section 1022.1.

4. Separation from the interior of the building is not required for exterior ramps or stairways connected to open-ended corridors, provided that Items 4.1 through 4.4 are met:

4.1. The building, including corridors, ramps and stairs, shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

4.2. The open-ended corridors comply with Section 1018.

4.3. The open-ended corridors are connected on each end to an exterior exit ramp or stairway complying with Section 1026.

4.4. 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 ramp or stairway shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

## **SECTION 1027 EXIT DISCHARGE**

### **1027.1 General.**

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

#### **Exceptions:**

1. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:

1.1. Such exit enclosures egress to 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 exit 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 exit enclosure.

1.3. The egress path from the exit enclosure on the level of exit discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of exit discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.

2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:

2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire-resistance rating for the exit 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 construction providing protection at least the equivalent of approved wired glass in steel frames.



- 2.4. The area is used only for means of egress and exits directly to the outside.
3. Stairways in open parking garages complying with Section 1022.1, Exception 4, are permitted to egress through the open parking garage at their levels of exit discharge.
4. Horizontal exits complying with Section 1025 shall not be required to discharge directly to the exterior of the building.

### **1027.2 Exit discharge capacity.**

The capacity of the exit discharge shall be not less than the required discharge capacity of the exits being served.

### **1027.3 Exit discharge location.**

Exterior balconies, stairways and ramps shall be located at least 10 feet (3048 mm) from adjacent lot lines and from other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with Section 705 based on fire separation distance.

### **1027.4 Exit discharge components.**

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

### **1027.5 Egress courts.**

Egress courts serving as a portion of the exit discharge in the means of egress system shall comply with the requirements of Section 1027.

#### **1027.5.1 Width.**

The width of egress courts shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm), except as specified herein. Egress courts serving Group R-3 and U occupancies shall not be less than 36 inches (914 mm) in width. The required width of egress courts shall be unobstructed to a height of 7 feet (2134 mm).

**Exception:** Doors complying with Section 1005.2.

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. In no case shall the width of the egress court be less than the required minimum.

#### **1027.5.2 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 court. Openings within such walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour.

**Exceptions:**

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

**1027.6 Access to a public way.**

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

**Next Week**

- Tue 09/20
- Exam 3 – Fire Resistive Construction/Mean of Egress Components/any previously covered topics may be included
  - In-Class Assignment 1 – bring measuring tape and plan created the previous week (make several copies)
  - Means of Egress – Doors, Stairs, Ramps, Elevators
- Thu 09/22
- Review of In-Class Assignment 1
  - Review of Assignment 1 Egress Plan – bring printout of your Assignment 1 layout – 1/8"=1'-0" scale, all program spaces included, each space labeled with square footage included – also bring trace paper and architectural scale