

MEANS OF EGRESS – SPECIAL CONDITIONS

Assembly Means of Egress

Section 1028 covers all assembly occupancies in Group A and assembly occupancies accessory to Group E and contains special provisions for means of egress and shall be consulted whenever dealing with assembly occupancies.

For Occupant Load of 300 or over:

- *Main Exit* – this exit shall accommodate at least 50% of occupant load and for Group A it shall lead directly to public way
- *Additional Exits* – at least one half of additional exits shall lead directly to an exit, lobby with an exit, or one hour rated corridor

For Occupant Load under 300:

- At least one of required means of egress shall go directly to an exit, or through a lobby no providing access to other required exit, or to one hour rated corridor or lobby; at least one exit shall discharge on a public way

Emergency Escape and Rescue

Group R occupancies require emergency escape and rescue openings from basements and sleeping rooms below fourth story above the grade plane that egress directly into a public way or yard or court as described in Section 1029.

Means of Egress Illumination

The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied as described in Section 1006. In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

- Aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.
- Corridors, exit enclosures and exit passageways in buildings required to have two or more exits.
- Exterior egress components at other than their levels of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
- Interior exit discharge elements in buildings required to have two or more exits.
- Exterior landings for exit discharge doorways in buildings required to have two or more exits.

Luminous Egress Path Markings

Approved luminous egress path markings delineating the exit path in exit enclosures shall be provided in buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access as described in Section 1024.

SECTION 1028 ASSEMBLY

1028.1 General.

All occupancies in Group A and assembly occupancies accessory to Group E including those which contain seats, tables, displays, equipment or other material shall comply with this section.

1028.2 Assembly main exit.

Group A occupancies and assembly occupancies accessory to Group E occupancies that have an occupant load of greater than 300 shall be provided with a main exit. The main exit shall be of sufficient width to accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width 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 at least one street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way.

Exceptions:

1. In assembly occupancies where there is no 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 width of egress is not less than 100 percent of the required width. At least one exit shall discharge on a street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way.
2. Smoke-protected seating complying with Section 1028.6.2.

1028.3 Assembly other exits.

In addition to having access to a main exit, each level in Group A occupancies or assembly occupancies accessory to Group E occupancies having an occupant load greater than 300, shall be provided with additional means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1015.2. At least one-half of the additional means of egress required by this section shall be directly to an exit, or through a lobby, that is not used to access the main exit, to an exit, or to a one hour rated corridor to an exit.

Exceptions:

1. In assembly occupancies where there is no 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 width of egress is not less than 100 percent of the required width. At least one exit shall discharge on a street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way.
2. Smoke-protected seating complying with Section 1028.6.2.

1028.3.1 Occupant loads less than 300.

Group A occupancies or assembly occupancies accessory to Group E occupancies that have an occupant load of 100 or more and less than 300, shall have at least one of the required means of egress directly to an exit, or through a lobby, that is not used to access

the other required exit, to an exit, or to a one-hour rated corridor to an exit or continuous through a one-hour rated lobby to an exit. At least one exit shall discharge on a street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way.

1028.4 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 required clear width 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.

1028.5 Interior balcony and gallery means of egress.

For balconies, galleries or press boxes having a seating capacity of 50 or more located in Group A occupancies, at least two means of egress shall be provided, with one from each side of every balcony, gallery or press box and at least one leading directly to an exit.

1028.5.1 Enclosure of openings.

Interior stairways and other vertical openings shall be enclosed in an exit enclosure as provided in Section 1022.1, except that stairways are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities. At least one accessible means of egress is required from a balcony, gallery or press box level containing accessible seating locations in accordance with Section 1007.3 or 1007.4.

1028.6 Width of means of egress for assembly.

The clear width of aisles and other means of egress shall comply with Section 1028.6.1 where smoke-protected seating is not provided and with Section 1028.6.2 or 1028.6.3 where smoke-protected seating is provided. The clear width shall be measured to walls, edges of seating and tread edges except for permitted projections.

1028.6.1 Without smoke protection.

The clear width of the means of egress shall provide sufficient capacity in accordance with all of the following, as applicable:

1. At least 0.3 inch (7.6 mm) of width for each occupant served shall be provided on stairs having riser heights 7 inches (178 mm) or less and tread depths 11 inches (279 mm) or greater, measured horizontally between tread nosings.
2. At least 0.005 inch (0.127 mm) of additional stair width for each occupant shall be provided for each 0.10 inch (2.5 mm) of riser height above 7 inches (178 mm).
3. Where egress requires stair descent, at least 0.075 inch (1.9 mm) of additional width for each occupant shall be provided on those portions of stair width having no handrail within a horizontal distance of 30 inches (762 mm).
4. Ramped means of egress, where slopes are steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.22 inch (5.6 mm) of clear width for each occupant served. Level or ramped means of egress, where slopes are not steeper than one

unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.20 inch (5.1 mm) of clear width for each occupant served.

1028.6.2 Smoke-protected seating.

The clear width of the means of egress for smoke-protected assembly seating shall not be less than the occupant load served by the egress element multiplied by the appropriate factor in Table 1028.6.2. 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 NFPA 101, shall be done for a facility utilizing the reduced width requirements of Table 1028.6.2 for smoke-protected assembly seating.

Exception: For an outdoor smoke-protected assembly with an occupant load not greater than 18,000, the clear width shall be determined using the factors in Section 1028.6.3.

TABLE 1028.6.2 WIDTH OF AISLES FOR SMOKE-PROTECTED ASSEMBLY

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY OCCUPANCY	INCHES OF CLEAR WIDTH PER SEAT SERVED			
	Stairs and aisle steps with handrails within 30 inches	Stairs and aisle steps without handrails within 30 inches	Passageways, doorways and ramps not steeper than 1 in 10 in slope	Ramps steeper than 1 in 10 in slope
Equal to or less than 5,000	0.200	0.250	0.150	0.165
10,000	0.130	0.163	0.100	0.110
15,000	0.096	0.120	0.070	0.077
20,000	0.076	0.095	0.056	0.062
Equal to or greater than 25,000	0.060	0.075	0.044	0.048

For SI: 1 inch = 25.4 mm.

1028.6.3 Width of means of egress for outdoor smoke- protected assembly.

The clear width in inches (mm) of aisles and other means of egress 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 aisles and stairs and multiplied by 0.06 (1.52 mm) where egress is by ramps, corridors, tunnels or vomitories.

Exception: The clear width in inches (mm) of aisles and other means of egress shall be permitted to comply with Section 1028.6.2 for the number of seats in the outdoor smoke-protected assembly where Section 1028.6.2 permits less width.

1028.7 Travel distance.

Exits and aisles shall be so located that the travel distance to an exit door shall not be greater than 200 feet (60 960 mm) measured along the line of travel in nonsprinklered buildings. Travel distance shall not be 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 accessway 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 stair, 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.

1028.8 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).

1028.9 Assembly aisles are required.

Every occupied portion of any occupancy in Group A or assembly occupancies accessory to Group E that contains seats, tables, displays, similar fixtures or equipment shall be provided with aisles leading to exits or exit access doorways in accordance with this section. Aisle accessways for tables and seating shall comply with Section 1017.4.

1028.9.1 Minimum aisle width.

The minimum clear width for aisles shall be as shown:

1. Forty-eight inches (1219 mm) for aisle stairs having seating on each side.
Exception: Thirty-six inches (914 mm) where the aisle serves less than 50 seats.
2. Thirty-six inches (914 mm) for aisle stairs having seating on only one side.
3. Twenty-three inches (584 mm) between an aisle stair handrail or guard and seating where the aisle is subdivided by a handrail.
4. 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.
5. Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.
Exceptions: 1. Thirty inches (762 mm) where the aisle does not serve more than 14 seats.
2. Twenty-three inches (584 mm) between an aisle stair handrail and seating where an aisle does not serve more than five rows on one side.
6. Libraries with open book stacks shall have main aisles not less than 44 inches (1118 mm) in width, and side, range and end aisles not less than 36 inches (914 mm) in width.

1028.9.2 Aisle width.

The aisle width shall provide sufficient egress 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 that is 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.

1028.9.3 Converging aisles.

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

1028.9.4 Uniform width.

Those portions of aisles, where egress is possible in either of two directions, shall be uniform in required width.

1028.9.5 Assembly aisle termination.

Each end of an aisle shall terminate at cross aisle, foyer, doorway, vomitory or concourse 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 20 feet (6096 mm) are permitted where seats beyond the 20-foot (6096 mm) dead-end aisle are no 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.
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.

1028.9.6 Assembly aisle obstructions.

There shall be no obstructions in the required width of aisles except for handrails as provided in Section 1028.13.

1028.10 Clear width of aisle accessways serving seating.

Where seating rows have 14 or fewer seats, the minimum clear aisle accessway width shall not be 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.

1028.10.1 Dual access.

For rows of seating served by aisles or doorways at both ends, there shall not be 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, but 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 1028.10.1.

TABLE 1028.10.1 SMOKE-PROTECTED ASSEMBLY AISLE ACCESSWAYS

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY OCCUPANCY	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
Less than 4,000	14	7
4,000	15	7
7,000	16	8
10,000	17	8
13,000	18	9
16,000	19	9
19,000	20	10
22,000 and greater	21	11

For SI: 1 inch = 25.4 mm.

1028.10.2 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, but 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 1028.10.1.

1028.11 Assembly aisle walking surfaces.

Aisles with a slope not exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a ramp having a slip-resistant walking surface. Aisles with a slope exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a series of risers and treads that extends across the full width of aisles and complies with Sections 1028.11.1 through 1028.11.3.

1028.12 Seat stability.

In places of assembly, the seats shall be securely fastened to the floor.

Exceptions:

1. In places of assembly 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 places of assembly 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 places of assembly 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 places of assembly where flexibility of the seating arrangement is an integral part of the design and function of the space and seating is on tiered levels, a maximum of 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 place of assembly separated from other seating by railings, guards, partial height walls or similar barriers with level floors and having no 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.

1028.13 Handrails.

Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and aisle stairs shall be provided with handrails located either at the side or within the aisle width.

Exceptions:

1. Handrails are not required for ramped aisles having a gradient no greater than one unit vertical in eight units horizontal (12.5-percent slope) and seating on both sides.
2. Handrails are not required if, at the side of the aisle, there is a guard that complies with the graspability requirements of handrails.
3. Handrail extensions are not required at the top and bottom of aisle stairs and aisle ramp runs to permit crossovers within the aisles.

1028.13.1 Discontinuous handrails. Where there is seating on both sides of the aisle, the 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 at least 22 inches (559 mm) and not greater than 36 inches (914 mm), measured horizontally, and the handrail shall have rounded terminations or bends.

1028.13.2 Intermediate handrails. Where handrails are provided in the middle of aisle stairs, there shall be an additional intermediate handrail located approximately 12 inches (305 mm) below the main handrail.

1028.14 Assembly guards.

Assembly guards shall comply with Sections 1028.14.1 through 1028.14.3.

1028.14.1 Cross aisles.

Cross aisles located more than 30 inches (762 mm) above the floor or grade below shall have guards in accordance with Section 1013.

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.

1028.14.2 Sightline-constrained guard heights.

Unless subject to the requirements of Section 1028.14.3, a fascia or railing system in accordance with the guard requirements of Section 1013 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. At bleachers, a guard must be provided where required by ICC 300.

1028.14.3 Guards at the end of aisles.

A fascia or railing system complying with the guard requirements of Section 1013 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.

1028.15 Bench seating.

Where bench seating is used, the number of persons shall be based on one person for each 18 inches (457 mm) of length of the bench.

SECTION 1029 EMERGENCY ESCAPE AND RESCUE

1029.1 General.

In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue in Group R 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 section. 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. In Groups R-1 and R-2 occupancies constructed of Type I, Type IIA, Type IIIA or Type IV construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

2. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of Section 404, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.
3. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue windows.
4. High-rise buildings in accordance with Section 403.
5. 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 provides access to a public way.
6. Basements without habitable spaces and having no more than 200 square feet (18.6 m²) in floor area shall not be required to have emergency escape windows.

1029.2 Minimum size.

Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.53 m²).

Exception: The minimum net clear opening for emergency escape and rescue grade-floor openings shall be 5 square feet (0.46 m²).

1029.2.1 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.

1029.3 Maximum height from floor.

Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

1029.4 Operational constraints.

Emergency escape and rescue openings and any exit doors shall be maintained free of any obstructions other than those allowed by this section and shall be operational from the inside of the room. 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 Section 1029.2 and such devices shall be releasable or removable from the inside without the use of a key, tool, special knowledge or effort 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, smoke alarms shall be installed in accordance with Section 907.2.11 regardless of the valuation of the alteration. The release mechanism shall be maintained operable at all times.

Such bars, grills, grates or any similar devices shall be equipped with an approved exterior release device for use by the fire department only when required by the authority having jurisdiction.

Where security bars (burglar bars) are installed on emergency egress and rescue windows or doors, on or after July 1, 2000, such devices shall comply with California Building

Standards Code, Part 12, Chapter 12-3 and other applicable provisions of Part 2.

Exception: Group R1 occupancies provided with a monitored fire sprinkler system in accordance with Section 903.2.8 and designed in accordance with NFPA 13 may have openable windows permanently restricted to a maximum 4-inch (102 mm) open position.

1029.5 Window wells.

An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall be provided with a window well in accordance with Sections 1029.5.1 and 1029.5.2.

1029.5.1 Minimum size.

The minimum horizontal area of the window well shall be 9 square feet (0.84 m²), with a minimum dimension of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

1029.5.2 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 section are exempt from the stairway requirements of Section 1009.

SECTION 1006 MEANS OF EGRESS ILLUMINATION

1006.1 Illumination required.

The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress 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, R-2.1 and R-4 occupancies.

1006.2 Illumination level.

The means of egress illumination level shall not be less than 1 foot-candle (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 to not less than 0.2 foot-candle (2.15 lux), provided that the required

illumination is automatically restored upon activation of a premises' fire alarm system where such system is provided.

1006.3 Illumination emergency power.

The power supply for means of egress illumination shall normally be provided by the premises' electrical supply.

In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

1. Aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.
2. Corridors, exit enclosures and exit passageways in buildings required to have two or more exits.
3. Exterior egress components at other than their levels of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
4. Interior exit discharge elements, as permitted in Section 1027.1, in buildings required to have two or more exits.
5. Exterior landings as required by Section 1008.1.6 for exit discharge doorways in buildings required to have two or more exits.

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 Chapter 27.

SECTION 1024 LUMINOUS EGRESS PATH MARKINGS

1024.1 General.

Approved luminous egress path markings delineating the exit path shall be provided in buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access in accordance with Sections 1024.1 through 1024.5.

Exceptions:

1. Luminous egress path markings shall not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1027.1, Exception 1.
2. Luminous egress path markings shall not be required in areas of open parking garages that serve as part of the exit path in accordance with Section 1027.1, Exception 3.

1024.2 Markings within exit enclosures.

Egress path markings shall be provided in exit enclosures, including vertical exit enclosures and exit passageways, in accordance with Sections 1024.2.1 through 1024.2.6.

1024.2.1 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 at a maximum of 1/2 inch (13 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by more than 1/2 inch (13 mm) down the vertical face of the step.

1024.2.2 Landings.

The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.

1024.2.3 Handrails.

All 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).

1024.2.4 Perimeter demarcation lines.

Stair landings and other floor areas within exit enclosures, 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).

1024.2.5 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 no 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 no 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.

1024.2.6 Doors from exit enclosures.

Doors through which occupants within an exit enclosure must pass in order to complete the exit path shall be provided with markings complying with Sections 1024.2.6.1 through 1024.2.6.3.

1024.3 Uniformity.

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

1024.4 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 are not limited to, self-luminous materials and photoluminescent materials. Materials shall comply with either:

1024.5 Illumination.

Exit enclosures where photoluminescent exit path markings are installed shall be provided with the minimum means of egress illumination required by Section 1006 for at least 60 minutes prior to periods when the building is occupied.

Next Week

Tue 09/27 - NO CLASS – WHOLE CLASS VOLUNTEERED TO ATTEND IIDA STUDENT EVENT AT KNOLL SHOWROOM IN SAN FRANCISCO

Thu 09/29 - Exam 4 – Means of Egress/any previously covered topics may be included
- Interior Finishes & Fire Protection Systems, pg 119-150