

User note:**About this chapter:**

Chapter 10 provides the general criteria for designing the means of egress established as the primary method for protection of people in buildings by allowing timely relocation or evacuation of building occupants. Both prescriptive and performance language is utilized in this chapter to provide for a basic approach in the determination of a safe exiting system for all occupancies. This chapter addresses all portions of the egress system (exit access, exits and exit discharge) and includes design requirements as well as provisions regulating individual components. The requirements detail the size, arrangement, number and protection of means of egress components. Functional and operational characteristics that will permit the safe use of components without special knowledge or effort are specified.

The means of egress protection requirements work in coordination with other sections of the code, such as protection of vertical openings (see Chapter 7), interior finish (see Chapter 8), fire suppression and detection systems (see Chapter 9) and numerous others, all having an impact on life safety. Sections 1003 through 1031 are duplicated text from Chapter 10 of the International Building Code®; however, the Oregon Fire Code contains an additional Section 1032 on maintenance of the means of egress system in existing buildings and within that section an Oregon amendment that expands on the inspection and maintenance of fire escapes. Retroactive minimum means of egress requirements for existing buildings built prior to a state building code are found in Chapter 11.

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. Sections 1003 through 1031 shall apply to new construction. Section 1032 shall apply to existing buildings.

Exception: Detached one- and two-family *dwelling*s and *townhouses* not more than three stories above *grade plane* in height with a separate means of egress and their accessory structures shall comply with the *International Residential Code*.

[BE] 1001.2 Alteration to existing means of egress. 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 Abatement of buildings and structures with inadequate means of egress. Buildings or structures that are not provided with adequate *means of egress* or emergency escapes are unsafe and shall be subject to the abatement procedures specified in Section 111. Where abatement is by repair or rehabilitation, *means of egress* and emergency escapes shall be provided and maintained in accordance with the *Oregon Structural Specialty Code*.

Such unsafe buildings are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition or removal. See the abatement procedures specified in Oregon Administrative Rule (OAR) 837-041-0050. Actions to correct hazards and other deficiencies shall be in accordance with Oregon Revised Statutes (ORS) 479.170 and 479.195.

ORS 479.170, 479.195 and OAR 837-041-0050 are not a part of this code but are reproduced or paraphrased here for the reader's convenience:

ORS 479.170 provides authority to the State Fire Marshal or deputies to order repair or removal of materials from buildings or premises.

ORS 479.195 provides authority to the State Fire Marshal or deputies to close buildings when the occupant load is exceeded.

OAR 837-041-0050 defines the rules for the abatement, repair or discontinuance of use or occupancy of unsafe buildings and specifies the parameters that are used to determine the degree of fire and life hazards.

1001.4 Maintenance. *Means of egress* shall be maintained in accordance with the *Oregon Fire Code*.

1001.4.1 Fire safety and evacuation plans. Fire safety and evacuation plans shall be provided for all occupancies and buildings where required by the *Oregon Fire Code*. Such fire safety and evacuation plans shall comply with the applicable provisions of Sections 401.2 and 404 of this code.

SECTION 1002—DEFINITIONS

[BE] 1002.1 Definitions. The following terms are defined in Chapter 2:

ACCESSIBLE MEANS OF EGRESS.

AISE.

AISE ACCESSWAY.

ALTERNATING TREAD DEVICE.

AREA OF REFUGE.

AUTOMATIC FLUSH BOLT.

MEANS OF EGRESS

BLEACHERS.
BREAKOUT.
CIRCULATION PATH.
COMMON PATH OF EGRESS TRAVEL.
CONSTANT LATCHING BOLT.
CORRIDOR.
DEAD BOLT.
DEFEND-IN-PLACE.
DOOR, BALANCED.
EGRESS COURT.
EMERGENCY ESCAPE AND RESCUE OPENING.
EXIT.
EXIT ACCESS.
EXIT ACCESS DOORWAY.
EXIT ACCESS RAMP.
EXIT ACCESS STAIRWAY.
EXIT DISCHARGE.
EXIT DISCHARGE, LEVEL OF.
EXIT PASSAGEWAY.
EXTERIOR EXIT RAMP.
EXTERIOR EXIT STAIRWAY.
FIRE EXIT HARDWARE.
FIXED SEATING.
FLIGHT.
FLOOR AREA, GROSS.
FLOOR AREA, NET.
FOLDING AND TELESCOPIC SEATING.
GRADE FLOOR EMERGENCY ESCAPE AND RESCUE OPENINGS.
GRANDSTAND.
GUARD.
HANDRAIL.
HORIZONTAL EXIT.
INTERIOR EXIT RAMP.
INTERIOR EXIT STAIRWAY.
LOW ENERGY POWER-OPERATED DOOR.
MANUAL BOLT.
MEANS OF EGRESS.
MERCHANDISE PAD.
NOSING.
OCCUPANT LOAD.
OPEN-AIR ASSEMBLY SEATING.
OPEN-ENDED CORRIDOR.
OVERHEAD DOORSTOP.
PANIC HARDWARE.
PHOTOLUMINESCENT.
POWER-ASSISTED DOOR.
POWER-OPERATED DOOR.
PUBLIC WAY.
RAMP.
SCISSOR STAIRWAY.

SELF-LUMINOUS.

SMOKE-PROTECTED ASSEMBLY SEATING.

STAIR.

STAIRWAY.

STAIRWAY, INTERIOR EXIT.

STAIRWAY, SPIRAL.

WINDER.

SECTION 1003—GENERAL MEANS OF EGRESS

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

[BE] 1003.2 Ceiling height. The *means of egress* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor.

Exceptions:

1. Sloped ceilings in accordance with Section 1208.2 of the *International Building Code*.
2. Ceilings of *dwelling units* and *sleeping units* within residential occupancies in accordance with Section 1208.2 of the *International Building Code*.
3. Allowable projections in accordance with Section 1003.3.
4. *Stair* headroom in accordance with Section 1011.3.
5. Door height in accordance with Section 1010.1.1.
6. *Ramp* headroom in accordance with Section 1012.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas of public and private parking garages in accordance with Section 406.2.2 of the *International Building Code*.
8. Areas above and below *mezzanine* floors in accordance with Section 505.2 of the *International Building Code*.

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

[BE] 1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 where a minimum headroom of 80 inches (2032 mm) is provided over any circulation paths, 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, overhead doorstops, frame stops, power door operators and electromagnetic door locks shall be permitted to project into the door opening height not lower than 78 inches (1980 mm) above the floor.

A barrier shall be provided where the vertical clearance above a circulation path is less than 80 inches (2032 mm) high above the finished floor. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the finished floor.

[BE] 1003.3.2 Post-mounted objects. A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (102 mm) where the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the finished floor. 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.

[BE] 1003.3.3 Horizontal projections. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finished floor shall not project horizontally more than 4 inches (102 mm) into the circulation path.

Exception: *Handrails* are permitted to protrude 4¹/₂ inches (114 mm) from the wall or guard.

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

[BE] 1003.4 Slip-resistant surface. Circulation paths of the *means of egress* shall have a slip-resistant surface and be securely attached.

[BE] 1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the *means of egress*, sloped surfaces shall be used. Where the slope is greater than 1 unit vertical in 20 units horizontal (5 percent slope), *ramps* complying with Section 1012 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the *ramp* shall be equipped with either *handrails* or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. Steps at exterior doors complying with Section 1010.1.4.

2. A *stair* with a single riser or with two risers and a tread is permitted at locations not required to be *accessible* by Chapter 11 of the *International Building Code*, where the risers and treads comply with Section 1011.5, the minimum depth of the tread is 13 inches (330 mm) and not less than one *handrail* complying with Section 1014 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the *stair*.
3. A step is permitted in *aisles* serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be *accessible* by Chapter 11 of the *International Building Code*, provided that the risers and treads comply with Section 1030.14 and the *aisle* is provided with a *handrail* complying with Section 1030.16.

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

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

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

Exception: Elevators used as an *accessible means of egress* in accordance with Section 1009.4.

SECTION 1004—OCCUPANT LOAD

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

[BE] 1004.2 Cumulative occupant loads. Where the path of egress travel includes intervening rooms, areas or spaces, cumulative *occupant loads* shall be determined in accordance with this section.

[BE] 1004.2.1 Intervening spaces or accessory areas. Where occupants egress from one or more rooms, areas or spaces through others, the design *occupant load* shall be the combined *occupant load* of interconnected accessory or intervening spaces. Design of egress path capacity shall be based on the cumulative portion of *occupant loads* of all rooms, areas or spaces to that point along the path of egress travel.

[BE] 1004.2.2 Adjacent levels for mezzanines. That portion of the *occupant load* of a *mezzanine* with required egress through a room, area or space on an adjacent level shall be added to the *occupant load* of that room, area or space.

[BE] 1004.2.3 Adjacent stories. Other than for the egress components designed for convergence in accordance with Section 1005.6, the *occupant load* from separate stories shall not be added.

[BE] 1004.3 Multiple-function occupant load. Where an area under consideration contains multiple functions having different *occupant load* factors, the design *occupant load* for such area shall be based on the floor area of each function calculated independently.

[BE] 1004.4 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.

[BE] 1004.5 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 1004.5. For areas without *fixed seating*, the *occupant load* shall be not less than that number determined by dividing the floor area under consideration by the *occupant load* factor assigned to the function of the space as set forth in Table 1004.5. Where an intended function is not listed in Table 1004.5, the *fire code official* shall establish a function based on a listed function that most nearly resembles the intended function.

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

[BE] TABLE 1004.5—MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
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
Exhibit gallery and museum	30 net

[BE] TABLE 1004.5—MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT—continued	
FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Assembly with fixed seats	See Section 1004.6
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	150 gross
Concentrated business use areas	See Section 1004.8
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
Group H-5 fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Information technology equipment facilities	300 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mall buildings—covered and open	See Section 402.8.2 of the <i>International Building Code</i>
Mercantile	60 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 ² , 1 foot = 304.8 mm.	
a. Floor area in square feet per occupant.	

[BE] 1004.5.1 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 1004.5, provided that all other requirements of the code are met based on such modified number and the *occupant load* does not exceed one occupant per 7 square feet (0.65 m²) of occupiable floor space. Where required by the *fire code official*, an *approved aisle*, seating or fixed equipment diagram substantiating any increase in *occupant load* shall be submitted. Where required by the *fire code official*, such diagram shall be posted.

[BE] 1004.6 Fixed seating. For areas having fixed seats and *aisles*, the *occupant load* shall be determined by the number of fixed seats installed therein. The *occupant load* for areas in which *fixed seating* is not installed, such as waiting spaces, shall be determined in accordance with Section 1004.5 and added to the number of fixed seats.

The *occupant load* of wheelchair spaces and the associated companion seat shall be based on one occupant for each wheelchair space and one occupant for the associated companion seat provided in accordance with Section 1109.2.3 of the *International Building Code*.

For areas having fixed seating without dividing arms, the *occupant load* shall be not less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

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

[BE] 1004.7 Outdoor areas. *Yards, patios, occupiable roofs, 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 *fire code 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.

[BE] 1004.8 Concentrated business use areas. The *occupant load* factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data entry centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. Where *approved* by the code official, the *occupant load* for concentrated business use areas shall be the actual *occupant load*, but not less than one occupant per 50 square feet (4.65 m²) of gross occupiable floor space.

[BE] 1004.9 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, for the intended configurations. Posted signs shall be of an *approved* legible permanent design and shall be maintained by the *owner* or the *owner's* authorized agent.

SECTION 1005—MEANS OF EGRESS SIZING

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

Exception: *Aisles* and *aisle accessways* in rooms or spaces used for assembly purposes complying with Section 1030.

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

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

[BE] 1005.3.1 Stairways. The capacity, in inches, of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant. Where *stairways* serve more than one story, only the *occupant load* of each story considered individually shall be used in calculating the required capacity of the *stairways* serving that story.

Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.
2. Facilities with *smoke-protected assembly seating* shall be permitted to use the capacity factors in Table 1030.6.2 indicated for stepped *aisles* for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is provided with a smoke control system complying with Section 909.
3. Facilities with *open-air assembly seating* shall be permitted to the capacity factors in Section 1030.6.3 indicated for stepped *aisles* for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is open to the outdoors.

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

Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.
2. Facilities with *smoke-protected assembly seating* shall be permitted to use the capacity factors in Table 1030.6.2 indicated for level or ramped *aisles* for *means of egress* components other than *stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is provided with a smoke control system complying with Section 909.
3. Facilities with *open-air assembly seating* shall be permitted to the capacity factors in Section 1030.6.3 indicated for level or ramped *aisles* for *means of egress* components other than *stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is open to the outdoors.

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