

# *Means of Egress*



OSHA Regulations

Part 1910 Subpart E

# *Objectives*



- Define key terms
- Discuss general requirements
- Discuss Means of Egress
- Discuss Employee Emergency Plans and Fire Prevention Plans

# *Standards*

- 1910.35 - Definitions
- 1910.36 - General requirements
- 1910.37 - Means of egress, general
- 1910.38 - Employee emergency plans and fire prevention plans
- 1910 Subpart E - Authority for 1910 Subpart E
- 1910 Subpart E App - Means of Egress

# 29 CFR 1910.35

## Definitions

- "Means of egress." A means of egress is a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consists of three separate and distinct parts: the way of exit access, the exit, and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards.

# 29 CFR 1910.35

## Definitions

- "Exit access." Exit access is that portion of a means of egress which leads to an entrance to an exit.
- "Exit." Exit is that portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in this subpart to provide a protected way of travel to the exit discharge.

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## Definitions

- Exit discharge." Exit discharge is that portion of a means of egress between the termination of an exit and a public way

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## Definitions

- "Low hazard contents." Low hazard contents shall be classified as those of such low combustibility that no self-propagating fire therein can occur and that consequently the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

# 29 CFR 1910.35

## Definitions

- "High-hazard contents." High-hazard contents shall be classified as those which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.



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## Definitions

- “Ordinary hazard contents.” Ordinary hazard contents shall be classified as those which are liable to burn with moderate rapidity and to give off a considerable volume of smoke but from which neither poisonous fumes nor explosions are to be feared in case of fire.

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## Definitions

- “Approved.” For the purposes of this subpart approved shall mean listed or approved equipment by a nationally recognized testing laboratory. Refer to 1910.155(c)(3)(iv)(A) for definition of listed, and 1910.7 for nationally recognized testing laboratory.

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## Definitions

- "Emergency action plan" means a plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

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## Definitions

- “Emergency escape route” means the route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area

# 29 CFR 1910.36

## General Requirements

- "Application." This subpart contains general fundamental requirements essential to providing a safe means of egress from fire and like emergencies. Nothing in this subpart shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in this subpart. Exits from vehicles, vessels, or other mobile structures are not covered by this subpart.

# 29 CFR 1910.36

## General Requirements

- "Fundamental requirements." **(b)(1)**
- Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of fire or other emergency
- The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergency will not depend solely on any single safeguard

# 29 CFR 1910.36

## General Requirements

- Every building or structure shall be so constructed, arranged, equipped, maintained, and operated as to avoid undue danger to the lives and safety of its occupants from fire, smoke, fumes, or resulting panic during the period of time reasonably necessary for escape from the building or structure in case of fire or other emergency.

# 29 CFR 1910.36

## General Requirements

- Every building or structure shall be provided with exits of kinds, numbers, location, and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available, and the height and type of construction of the building or structure, to afford all occupants convenient facilities for escape.



# 29 CFR 1910.36

## General Requirements

- In every building or structure exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening to prevent free escape from the inside of any building shall be installed except in mental, penal, or corrective institutions where supervisory personnel is continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

# 29 CFR 1910.36

## General Requirements

- Every exit shall be clearly visible or the route to reach it shall be conspicuously indicated in such a manner that every occupant of every building or structure who is physically and mentally capable will readily know the direction of escape from any point, and each path of escape, in its entirety, shall be so arranged or marked that the way to a place of safety outside is unmistakable. Any doorway or passageway not constituting an exit or way to reach an exit, but of such a character as to be subject to being mistaken for an exit, shall be so arranged or marked as to minimize its possible confusion with an exit and the resultant danger of persons endeavoring to escape from fire finding themselves trapped in a dead-end space, such as a cellar or storeroom, from which there is no other way out.

# 29 CFR 1910.36

## General Requirements

- In every building or structure equipped for artificial illumination, adequate and reliable illumination shall be provided for all exit facilities

# 29 CFR 1910.36

## General Requirements

- In every building or structure of such size, arrangement, or occupancy that a fire may not itself provide adequate warning to occupants, fire alarm facilities shall be provided where necessary to warn occupants of the existence of fire so that they may escape, or to facilitate the orderly conduct of fire exit drills.

# 29 CFR 1910.36

## General Requirements

- Every building or structure, section, or area thereof of such size, occupancy, and arrangement that the reasonable safety of numbers of occupants may be endangered by the blocking of any single means of egress due to fire or smoke, shall have at least two means of egress remote from each other, so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency conditions.

# 29 CFR 1910.36

## General Requirements

- Compliance with this subpart shall not be construed as eliminating or reducing the necessity for other provisions for safety of persons using a structure under normal occupancy conditions, nor shall any provision of the subpart be construed as requiring or permitting any condition that may be hazardous under normal occupancy conditions.

# 29 CFR 1910.36

## General Requirements

- "Protection of employees exposed by construction and repair operations."
- No building or structure under construction shall be occupied in whole or in part until all exit facilities required for the part occupied are completed and ready for use.

# 29 CFR 1910.36

## General Requirements

- No existing building shall be occupied during repairs or alterations unless all existing exits and any existing fire protection are continuously maintained, or in lieu thereof other measures are taken which provide equivalent safety.



# 29 CFR 1910.36

## General Requirements

- No flammable or explosive substances or equipment for repairs or alterations shall be introduced in a building of normally low or ordinary hazard classification while the building is occupied, unless the condition of use and safeguards provided are such as not to create any additional danger or handicap to egress beyond the normally permissible conditions in the building.

# 29 CFR 1910.36

## General Requirements

- "Maintenance."
- Every required exit, way of approach thereto, and way of travel from the exit into the street or open space, shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency

# 29 CFR 1910.36

## General Requirements

- Every automatic sprinkler system, fire detection and alarm system, exit lighting, fire door, and other item of equipment, where provided, shall be continuously in proper operating condition.

# 29 CFR 1910.37

## Means of Egress - General

- “Permissible exit components.” An exit shall consist only of the approved components. Exit components shall be constructed as an integral part of the building or shall be permanently affixed thereto.

# 29 CFR 1910.37

## Means of Egress - General

- “Protective enclosure of exits.” When an exit is protected by separation from other parts of the building the separating construction shall meet the following requirements.

# 29 CFR 1910.37

## Means of Egress - General

- The separation shall have at least a 1-hour fire resistance rating when the exit connects three stories or less. This applies whether the stories connected are above or below the story at which exit discharge begins.

# 29 CFR 1910.37

## Means of Egress - General

- The separation shall have at least a 2-hour fire resistance rating when the exit connects four or more stories, whether above or below the floor of discharge. It shall be constructed of noncombustible materials, and shall be supported by construction having at least a 2-hour fire resistance rating.

# 29 CFR 1910.37

## Means of Egress - General

- Any opening therein shall be protected by an approved self-closing fire door.
- Openings in exit enclosures shall be confined to those necessary for access to the enclosure from normally occupied spaces and for egress from the enclosure.



# 29 CFR 1910.37

## Means of Egress - General

- "Width and capacity of means of egress."
- The capacity in number of persons per unit of exit width for approved components of means of egress shall be as follows:

# 29 CFR 1910.37

## Means of Egress - General

- Level Egress Components (including Class A Ramps) 100 persons.
- Inclined Egress Components (including Class B Ramps) 60 persons.
- A ramp shall be designated as Class A or Class B in accordance with the following Table E-1:

# 29 CFR 1910.37

## Means of Egress - General

TABLE E-1

	Class A	Class B
Width.....	44 inches and greater.	30 to 44 inches.
Slope.....	1 to 1 3/16 inches in 12 inches.	1 3/16 to 2 inches in 12 inches.
Maximum height between landings.	No limit	12 feet.

# 29 CFR 1910.37

## Means of Egress - General

- Means of egress shall be measured in units of exit width of 22 inches. Fractions of a unit shall not be counted, except that 12 inches added to one or more full units shall be counted as one-half a unit of exit width.

# 29 CFR 1910.37

## Means of Egress - General

- Units of exit width shall be measured in the clear at the narrowest point of the means of egress except that a handrail may project inside the measured width on each side not more than 5 inches and a stringer may project inside the measured width not more than 1 1/2 inches. An exit or exit access door swinging into an aisle or passageway shall not restrict the effective width thereof at any point during its swing to less than the minimum widths hereafter specified.

# 29 CFR 1910.37

## Means of Egress - General

- "Egress capacity and occupant load."
- The capacity of means of egress for any floor, balcony, tier, or other occupied space shall be sufficient for the occupant load thereof. The occupant load shall be the maximum number of persons that may be in the space at any time

# 29 CFR 1910.37

## Means of Egress - General

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

# 29 CFR 1910.37

## Means of Egress - General

- "Arrangement of exits." When more than one exit is required from a story, at least two of the exits shall be remote from each other and so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency condition.



# 29 CFR 1910.37

## Means of Egress - General

- A door from a room to an exit or to a way of exit access shall be of the side-hinged, swinging type. It shall swing with exit travel when the room is occupied by more than 50 persons or used for a high hazard occupancy.

# 29 CFR 1910.37

## Means of Egress - General

- In no case shall access to an exit be through a bathroom, or other room subject to locking, except where the exit is required to serve only the room subject to locking.

# 29 CFR 1910.37

## Means of Egress - General

- Ways of exit access and the doors to exits to which they lead shall be so designed and arranged as to be clearly recognizable as such. Hangings or draperies shall not be placed over exit doors or otherwise so located as to conceal or obscure any exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit.

# 29 CFR 1910.37

## Means of Egress - General

- Exit access shall be so arranged that it will not be necessary to travel toward any area of high hazard occupancy in order to reach the nearest exit, unless the path of travel is effectively shielded from the high hazard location by suitable partitions or other physical barriers

# 29 CFR 1910.37

## Means of Egress - General

- The minimum width of any way of exit access shall in no case be less than 28 inches. Where a single way of exit access leads to an exit, its capacity in terms of width shall be at least equal to the required capacity of the exit to which it leads. Where more than one way of exit access leads to an exit, each shall have a width adequate for the number of persons it must accommodate.

# 29 CFR 1910.37

## Means of Egress - General

- “Exterior ways of exit access.”)
- Access to an exit may be by means of any exterior balcony, porch, gallery, or roof that conforms to the requirements of this section.
- Exterior ways of exit access shall have smooth, solid floors, substantially level, and shall have guards on the unenclosed sides.

# 29 CFR 1910.37

## Means of Egress - General

- Where accumulation of snow or ice is likely because of the climate, the exterior way of exit access shall be protected by a roof, unless it serves as the sole normal means of access to the rooms or spaces served, in which case it may be assumed that snow and ice will be regularly removed in the course of normal occupancy.

# 29 CFR 1910.37

## Means of Egress - General

- A permanent, reasonably straight path of travel shall be maintained over the required exterior way of exit access. There shall be no obstruction by railings, barriers, or gates that divide the open space into sections appurtenant to individual rooms, apartments, or other uses.



# 29 CFR 1910.37

## Means of Egress - General

- An exterior way of exit access shall be so arranged that there are no dead ends in excess of 20 feet. Any unenclosed exit served by an exterior way of exit access shall be so located that no part of the exit extends past a vertical plane 20 feet and one-half the required width of the exit from the end of and at right angles to the way of exit access.

# 29 CFR 1910.37

## Means of Egress - General

- Any gallery, balcony, bridge, porch, or other exterior exit access that projects beyond the outside wall of the building shall comply with the requirements of this section as to width and arrangement.

# 29 CFR 1910.37

## Means of Egress - General

- "Discharge from exits."
- All exits shall discharge directly to the street, or to a yard, court, or other open space that gives safe access to a public way. The streets to which the exits discharge shall be of width adequate to accommodate all persons leaving the building. Yards, courts, or other open spaces to which exits discharge shall also be of adequate width and size to provide all persons leaving the building with ready access to the street.

# 29 CFR 1910.37

## Means of Egress - General

- Stairs and other exits shall be so arranged as to make clear the direction of egress to the street. Exit stairs that continue beyond the floor of discharge shall be interrupted at the floor of discharge by partitions, doors, or other effective means

# 29 CFR 1910.37

## Means of Egress - General

- "Headroom." Means of egress shall be so designed and maintained as to provide adequate headroom, but in no case shall the ceiling height be less than 7 feet 6 inches nor any projection from the ceiling be less than 6 feet 8 inches from the floor.

# 29 CFR 1910.37

## Means of Egress - General

- "Changes in elevation." Where a means of egress is not substantially level, such differences in elevation shall be negotiated by stairs or ramps.

# 29 CFR 1910.37

## Means of Egress - General

- “Maintenance and workmanship.”
- Doors, stairs, ramps, passages, signs, and all other components of means of egress shall be of substantial, reliable construction and shall be built or installed in a workmanlike manner.

# 29 CFR 1910.37

## Means of Egress - General

- Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.
- Any device or alarm installed to restrict the improper use of an exit shall be so designed and installed that it cannot, even in cases of failure, impede or prevent emergency use of such exit.



# 29 CFR 1910.37

## Means of Egress - General

- "Furnishings and decorations."
- No furnishings, decorations, or other objects shall be so placed as to obstruct exits, access thereto, egress therefrom, or visibility thereof.
- No furnishings or decorations of an explosive or highly flammable character shall be used in any occupancy.

# 29 CFR 1910.37

## Means of Egress - General

- "Automatic sprinkler systems." All automatic sprinkler systems shall be continuously maintained in reliable operating condition at all times, and such periodic inspections and tests shall be made as are necessary to assure proper maintenance.

# 29 CFR 1910.37

## Means of Egress - General

- "Fire alarm signaling systems." The employer shall assure that fire alarm signaling systems are maintained and tested in accordance with the requirements of 1910.165(d).
- "Fire retardant paints." Fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary flame retardant properties.

# 29 CFR 1910.37

## Means of Egress - General

- "Exit marking."
- Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants

# 29 CFR 1910.37

## Means of Egress - General

- Any door, passage, or stairway which is neither an exit nor a way of exit access, and which is so located or arranged as to be likely to be mistaken for an exit, shall be identified by a sign reading "Not an Exit" or similar designation, or shall be identified by a sign indicating its actual character, such as "To Basement," "Storeroom," "Linen Closet," or the like.

# 29 CFR 1910.37

## Means of Egress - General

- Every required sign designating an exit or way of exit access shall be so located and of such size, color, and design as to be readily visible. No decorations, furnishings, or equipment which impair visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision to the required exit sign of such a character as to so detract attention from the exit sign that it may not be noticed.

# 29 CFR 1910.37

## Means of Egress - General

- Every exit sign shall be distinctive in color and shall provide contrast with decorations, interior finish, or other signs.
- A sign reading "Exit", or similar designation, with an arrow indicating the directions, shall be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent.

# 29 CFR 1910.37

## Means of Egress - General

- Every exit sign shall be suitably illuminated by a reliable light source giving a value of not less than 5 foot-candles on the illuminated surface.  
Artificial lights giving illumination to exit signs other than the internally illuminated types shall have screens, discs, or lenses of not less than 25 square inches area made of translucent material to show red or other specified designating color on the side of the approach.



# 29 CFR 1910.37

## Means of Egress - General

- Each internally illuminated exit sign shall be provided in all occupancies where reduction of normal illumination is permitted.
- Every exit sign shall have the word "Exit" in plainly legible letters not less than 6 inches high, with the principal strokes of letters not less than three-fourths-inch wide.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- “Emergency action plan”
- "Scope and application." This paragraph (a) applies to all emergency action plans required by a particular OSHA standard. The emergency action plan shall be in writing (except as provided in the last sentence of paragraph (a)(5)(iii) of this section) and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- Elements." The following elements, at a minimum, shall be included in the plan:

Emergency escape procedures and emergency escape route assignments;

- Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- Procedures to account for all employees after emergency evacuation has been completed;
- Rescue and medical duties for those employees who are to perform them;

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- The preferred means of reporting fires and other emergencies; and
- Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Alarm system."
- The employer shall establish an employee alarm system which complies with 1910.165.
- If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Evacuation." The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Training."
- Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.



# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- The employer shall review the plan with each employee covered by the plan at the following times:
  - Initially when the plan is developed,
  - Whenever the employee's responsibilities or designated actions under the plan change, and
  - Whenever the plan is changed.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- The employer shall review with each employee upon initial assignment those parts of the plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review. For those employers with 10 or fewer employees the plan may be communicated orally to employees and the employer need not maintain a written plan.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Fire prevention plan" -
- "Scope and application." This paragraph (b) applies to all fire prevention plans required by a particular OSHA standard. The fire prevention plan shall be in writing, except as provided in the last sentence of paragraph (b)(4)(ii) of this section.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Elements." The following elements, at a minimum, shall be included in the fire prevention plan:
- A list of the major workplace fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- Names or regular job titles of those personnel responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and
- Names or regular job titles of those personnel responsible for control of fuel source hazards.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Housekeeping." The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Training."
- The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review. For those employers with 10 or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.



# 29 CFR 1910.38

## Employee emergency plans and fire prevention plans

- "Maintenance." The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed on heat producing equipment to prevent accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan.

# Summary

- What is egress?
- What is the minimum size of an exit?
- What plans must be developed?
- How is an exit marked?