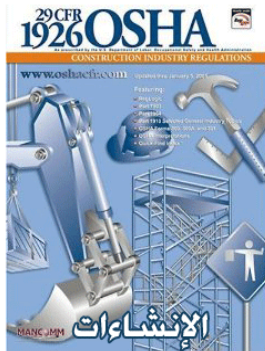




إدارة السلامة والصحة المهنية - الأوشا

Fire Safety Basics: Evacuation & Emergency Response Teams

يتم تدرس هذا الموضوع في دورات أوشا التالية:



- ☐ **OSHA 510:** Occupational Safety and Health Standards for the Construction Industry.
- ☐ **OSHA 511:** Occupational Health and Safety Standards for General Industry.
- ☐ **OSHA 2015:** Hazardous Materials

سبتمبر 2011
جزيرة تاروت، السعودية

دورات الاوشا

إذا أردت دورات الاوشا بصيغة بوربوينت، عليك ترجمة
موضوعين للغة العربية من دورات المقدمة في موقع "هندسة
الإطفاء والسلامة".

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Fire Safety Basics: Evacuation & Emergency Response Teams

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Means of Egress (1910.35)

- **Continuous and unobstructed way of exit travel from any point in a bldg to a public way**
 - Way of exit access
 - The exit
 - The way of exit discharge
- **Must be free, non locked, visible & marked (6 inch 'EXIT' letters)**
- **Passages that could be mistaken as exits must be marked as not being exits (ie 'not an exit') or be so arranged to minimized being mistaken as an exit**
- **Two remote means of egress through lesser hazard occupancy**

Exits

- a building's exits are the most important factor involved in protecting life from fire
- Exits often are inadequate in many buildings
- Consider the design of exits in a building's total fire safety system
- Must be sufficient in size and number to allow an orderly evacuation.
- A building's population and degree of hazard are the major factors when designing exits
- Every building or structure, and every section or area in it, shall have at least two separate means of exit.

Exits

- Arrange exits so that the possibility of any one fire blocking all exits is minimized.
- Safe exits require a safe path of escape from the fire with the least possible travel distance to the exit
- Path should be large enough to permit all occupants to reach a place of safety before they are endangered by the fire or by smoke and toxic gases.
- NFPA 101, *Life Safety Code*, provides a reasonable and comprehensive guide to exit requirements
- If local state or provincial, or federal codes may contain more rigid recommendations and therefore will apply

3 Components of an Exit

- **Exit Access**
- **Exit**
- **Exit Discharge**

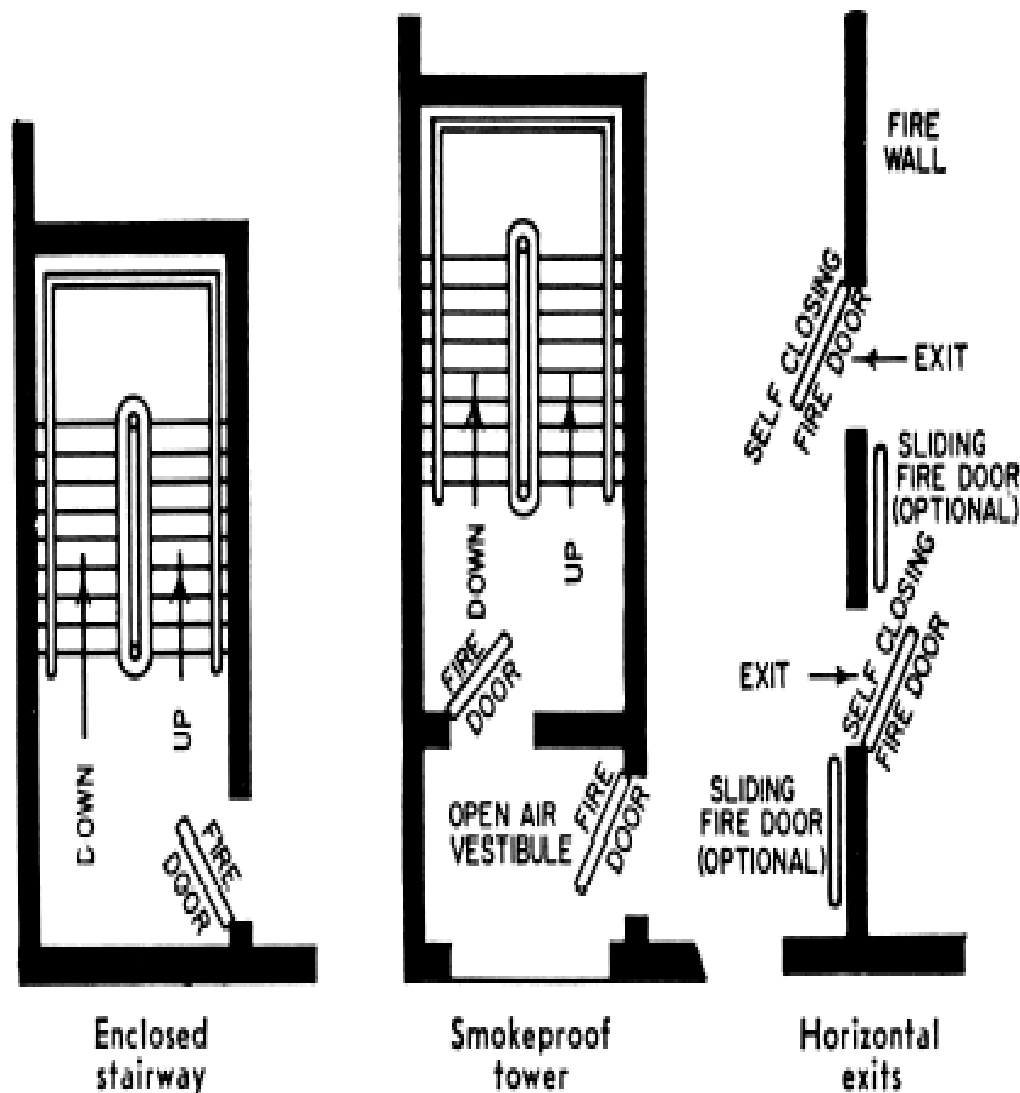


Figure 11-7. Plan views of types of exits. Stair enclosure prevents fire on any floor from trapping persons above. A smokeproof tower is better because an opening to the air at each floor largely prevents the chance of smoke on the stairway. A smokeproof tower charged with positive air pressure is more likely to prevent smoke from entering. A horizontal exit provides a quick refuge and decreases the need for a hasty flight down stairs. Horizontal sliding fire doors provided for safeguarding property values are arranged to close automatically in case of fire. Swinging doors are self-closing. Two wall openings are needed for exit in two directions. (Reprinted with permission from the National Fire Protection Association.)

Exit design

- **Not less than 28 inches**
- **Determined by the number of people and travel distance**
- **Shielded from high hazard occupancy**
- **Exit doors: side hinged, swing type that open in the direction of travel when area is occupied by more than 50 persons or high hazard occupancy**

Exit Design (now usu. by calculated evac times):

- **GSA stds: evac to safe area w/in 90 secs of alarm, a portion of the time (15 secs.) can be used in traveling toward the fire - i.e. as in a dead end corridor; all occupants must reach refuge w/ in 5 min of downward vertical travel or w/in 1 min upward vertical travel;**

Exit Design (now usu. by calculated evac times):

- **Calculation:**
$$T = \frac{N + n}{r \times u}$$
 - where T = time in mins. req'd for evac by stairs
 - N = number of people in blg above ground floor
 - n = number of people who can stand on stairs, at 3 ft sq/ person, or number of people on floor (lesser of the two)
 - r = rate of discharge in people / unit exit width
 - u = number of 22 in. exit units of stair width (note: 12 additional inches counts as ½ exit width)

Exit Design (now usu. by calculated evac times):

- Also must consider the time of evac. for the person from the most remote point to reach the stairs or exit and add into the calculation; This calc. will give you the MINIMUM time for a perfect evacuation; safety factors must be built in!!**

Emergency Planning (1910.38)

- **Training required when Employee Emergency Plans and Fire Prevention Plans are developed or responsibilities change**
- **Both plans should be written**
- **Evacuation Drills should be conducted at least once per year (not an OSHA requirement, but good practice and in many jurisdictions, a requirement of local law or regulation)**
 - primary and secondary routes of evac practiced
 - head count
 - duties

Emergency Response Teams

- **Fire Brigades 1910.156-**
 - incipient- basic fire extinguisher use as per FPP, annual training required
 - structural - equipment use!!!; quarterly training required, falls under many other standards at this point;

Emergency Response Teams

- **Medical response - differs by injury potential and response time ('near proximity'- 1910.151)**
- **Watch other regs like confined space, BBP as this could impact what you do**

Outside responders

- **Once arrive onsite, are in command of site to protect their personnel & public safety**
- **Should invite local fire to tour site annually for familiarity**
- **Discuss what, if any of the facility equipment they expect to use (usually very little) & response capabilities**
 - **Maintain access to radio, fire panel, risers & hydrants always**
- **Have plans, MSDS, etc at arrival location for their use**