
Course ID: 1017  -  Credit Hours: 1

Audience
Exit Routes, Emergency Action Plans, and Fire Prevention Plans, contains requirements essential to providing a safe means of escape from fire and similar emergencies. This subpart deals with the need to have a safe and efficient means of leaving a building or facility under emergency circumstances, with minimal problems finding and using it. Subpart L, Fire Protection, contains requirements for fire brigades, and all portable and fixed fire suppression equipment, fire detection systems, and fire or employee alarm systems installed to meet the fire protection requirements of 29 CFR Part 1910.

Accreditation
KLA Education Services LLC is accredited by the State of California Board of Registered Nursing, Provider # CEP16145

Course Objectives
Upon completion of the lesson, participants will be able to:
1. List or describe the three parts to an appropriate exit route.
2. Discuss at least four characteristics of an effective exit route.
3. Give four reasons for developing an emergency action plan.
4. Name the required elements of a fire prevention plan.
5. List at least four of the five classes of fire extinguishers and the types of fires they can properly extinguish.
6. Describe at least four requirements for proper maintenance of portable fire extinguishers.
Introduction

- Fires and explosions kill more than 200 and injure more than 5,000 workers each year
- There is a long and tragic history of workplace fires in this country caused by problems with fire exits and extinguishing systems
- OSHA requires employers to provide proper exits, fire fighting equipment, and employee training to prevent fire deaths and injuries in the workplace

Exit Routes, Emergency Action Plans, and Fire Prevention Plans:
29 CFR 1910 Subpart E

Fire Protection: 29 CFR 1910 Subpart L

An employer who demonstrates compliance with the exit route provisions of NFPA 101-2000, the Life Safety Code, will be deemed to be in compliance with the corresponding requirements in 29 CFR 1910.34, 1910.36, and 1910.37.

In 1995, more than 75,000 workplace fires cost businesses more than $2.3 billion.
Exit Route

- A continuous and unobstructed path of exit travel from any point within a workplace to a place of safety (including refuge areas)
- Consists of three parts:
  - Exit access
  - Exit
  - Exit discharge

29 CFR 1910.34
An exit route includes all vertical and horizontal areas along the route.

*Exit access* is that part of an exit route that leads to an exit.

*Exit* is that part of an exit route that is generally separated from other areas to provide a protected way of travel to the exit discharge.

*Exit discharge* is that part of an exit route that leads directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside.

A *refuge area* is:
- A space along an exit route protected from fire by a barrier with at least a 1-hour fire resistance rating; or
- A floor with at least 2 spaces, separated from each other by smoke-resistant partitions, in a building protected by an approved automatic sprinkler system.

Emphasis is on escaping from fires; however, some additional hazards include explosion, earthquake, bomb threat, toxic vapors, storms (tornadoes, hurricanes, etc.). Compounding factors that may interfere with safe escape include panic and confusion, poor visibility, lack of information, and misinformation. These factors frequently cause more injuries and fatalities than the hazard itself.
Exit Routes
Basic Requirements

- Exit routes must be permanent and there must be enough exits in the proper arrangement for quick escape
- Exits must be separated by fire-resistant materials
- Openings into an exit must be limited to those necessary to allow access to the exit or to the exit discharge
- An opening into an exit must be protected by an approved self-closing fire door that remains closed or automatically closes in an emergency

1910.36(a) and (b)

1910.37(d): Exit routes must be maintained during construction, repairs, or alterations
Exit Discharge

- Each exit discharge must lead directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside that is large enough to accommodate all building occupants likely to use the exit route.
- Exit stairs that continue beyond the level on which the exit discharge is located must be interrupted on that level by doors, partitions, or other effective means that clearly indicate the direction of travel to the exit discharge.

1910.36(c)
Exit Doors Must Be Unlocked

- Must be able to open from the inside at all times without keys, tools, or special knowledge
- Device such as a panic bar that locks only from the outside is permitted
- Must be free of any device or alarm that could restrict emergency use if the device or alarm fails
- May be locked from the inside only in mental, penal, or correctional facilities where there is constant supervision

1910.36(d)
High hazard contents are those which are liable to burn with extreme rapidity or which may produce poisonous fumes or explosions in a fire. Examples include flammable chemicals and grain.
1910.36(f) and (g)


Objects that project into the exit route must not reduce the width of the exit route to less than the minimum width requirements for exit routes.

An outdoor exit route is permitted if it meets the requirements of 1910.36(h).
Minimize Danger to Employees

- Exit routes must be free and unobstructed
- Keep exit routes free of explosive or highly flammable materials
- Arrange exit routes so that employees will not have to travel toward a high hazard area, unless it is effectively shielded
- Emergency safeguards (e.g., sprinkler systems, alarm systems, fire doors, exit lighting) must be in proper working order at all times

1910.37(a)

1910.37(b)(1): Each exit route must be adequately lighted so that an employee with normal vision can see along the exit route
Exit Marking

- Each exit must be clearly visible and marked with an “Exit” sign
- Each exit route door must be free of decorations or signs that obscure the visibility of the door

1910.37(b)(2) and (3)
Exit Marking (cont’d)

- If the direction of travel to the exit or exit discharge is not immediately apparent, signs must be posted along the exit access indicating direction to the nearest exit.
- The line-of-sight to an exit sign must clearly be visible at all times.

1910.37(b)(4)
Exit Marking (cont’d)

Each doorway or passage along an exit access that could be mistaken for an exit must be marked “Not an Exit” or similar designation, or be identified by a sign indicating its actual use (e.g., closet).

1910.37(b)(5)
1910.38(a) applies to all emergency action plans required by a particular OSHA standard, such as the Fire Brigades or Permit-Required Confined Spaces standard. The emergency action plan must be in writing, except for firms with 10 or fewer employees. These businesses can communicate the plan orally to employees.

Emergency plans include, as a minimum:
- Escape procedures and escape route assignments
- Critical plant operations shutdown procedure
- Procedure to account for all personnel
- Assignment of rescue and medical duties
- Means for reporting emergencies
- Identification of responsible persons to contact for further information

Employee training is necessary and an alarm system must be in place which has a distinctive signal.

1910.39 applies to all fire prevention plans required by a particular OSHA standard.

The fire prevention plan must be in writing, except for firms with 10 or fewer employees. Those businesses can communicate the plan orally to employees.

Accumulations of flammable and combustible waste materials and residues must be controlled so they do not contribute to a fire emergency.

Currently a fire prevention plan is required by OSHA only where an employer’s written policy:
- Requires immediate and total evacuation of the workplace upon the sounding of a fire alarm signal
- Establishes an appropriate emergency action plan
- Prohibits employee use of fire extinguishers

See 1910.157(b)
Portable Fire Extinguishers

If portable fire extinguishers are provided for employee use, the employer must mount, locate and identify them so workers can access them without subjecting themselves to possible injury.

1910.157(c)(1)

Employers can choose whether to train their workers to fight fires or to rely on outside services.
The class of extinguisher should be on the extinguisher shell. The picture-symbol labeling system now in use is designed to make the operation of fire extinguishers more effective and safe to use through the use of less confusing pictorial labels. The system also emphasizes when not to use an extinguisher on certain types of fires. Because of recent information outlining the difficulties inherent in the extinguishment of fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats), a new classification (Class K) has been established. This classification is not listed in OSHA standards. NFPA 10 specifies that listed and labeled Class K fire extinguishers are to be provided in these cases.
Class C extinguishers have only a letter rating because there is no readily measurable quantity for Class C fires which are essentially Class A or B fires involving energized electrical equipment. Class D extinguishers likewise do not have a numerical rating. Their effectiveness is described on the faceplate.

Class C extinguishers have only a letter rating because there is no readily measurable quantity for Class C fires which are essentially Class A or B fires involving energized electrical equipment. Class D extinguishers likewise do not have a numerical rating. Their effectiveness is described on the faceplate.

Class C extinguishers have only a letter rating because there is no readily measurable quantity for Class C fires which are essentially Class A or B fires involving energized electrical equipment. Class D extinguishers likewise do not have a numerical rating. Their effectiveness is described on the faceplate.

Class C extinguishers have only a letter rating because there is no readily measurable quantity for Class C fires which are essentially Class A or B fires involving energized electrical equipment. Class D extinguishers likewise do not have a numerical rating. Their effectiveness is described on the faceplate.

Extinguisher Rating

• Numerical rating given to Class A and B extinguishers which indicate how large a fire an experienced person can put out with the extinguisher

• Ratings are based on tests conducted at Underwriters’ Laboratories, Inc.
  – Class A: 1-A, 2-A, . . . 40-A
  – Class B: 1-B, 2-B, . . . 640-B

• A 4-A extinguisher, for example, should extinguish about twice as much fire as a 2-A extinguisher
Maintaining Portable Fire Extinguishers

- Must maintain in a fully charged and operable condition
- Must keep in their designated places at all times except during use
- Must conduct an annual maintenance check
- Must record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less

1910.157(c)(4)
1910.157(e)(3)
Training and education required upon initial employment/assignment and at least annually thereafter.

“Incipient Stage Fire” means a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus. [1910.155(c)(26)]
Summary

• There must be enough exits in the proper arrangement for quick escape
• Exit routes must be marked, lighted, free of obstructions, and locks must not be used to impede or prevent escape
• An emergency action plan and a fire prevention plan must be in place
• Fire extinguisher classes and numerical ratings help a user understand its capabilities
• Fire extinguishers must be inspected, maintained and employees must be trained in how to use them