

Chapter 12: [Fire and Life Safety](#)

Portable Fire Extinguisher Requirements

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URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/fireReqExting.pdf>

1 Purpose

The purpose of these requirements is to ensure the availability and effective use of portable fire extinguishers. They cover selection, location, purchase and installation, use and training, and maintenance. They apply to workers and supervisors, area and building managers, Facilities and Operations, the Stanford University Fire Protection Systems Group, and the SLAC fire marshal.

2 Requirements

2.1 Selection

Managers and supervisors must designate a person to be responsible for selecting, purchasing, replacing, and determining the need for portable fire extinguishers in their area and must coordinate these activities with the SLAC fire marshal.

When selecting portable fire extinguishers, consider

- Size of the area to be protected to determine the number and size of fire extinguishers
- Types of possible fires in the area to determine the class or classes of fire extinguishers needed
- Weight of the fire extinguishers. Although they may be necessary in some cases, heavier fire extinguishers can be difficult to handle.
- Potential damage that may be caused by using fire extinguishers on various types of equipment located in the area

The National Fire Protection Association ([NFPA 10](#)) categorizes fires into five classes: A, B, C, D and K.

- Class A fires involve solid hydrocarbon materials such as plastics, wood, paper or cloth.
- Class B fires involve burning hydrocarbon liquids, such as oil, paint or solvent.
- Class C fires involve energized electrical equipment.
- Class D fires involve burning metal. (Most metals will burn in finely divided form. Some metals such as lithium are highly reactive even in bulk form.)
- Class K fires involve burning cooking oils and greases.

Manufacturers rate and label portable fire extinguishers to indicate the classes and sizes of fires that they can extinguish. This rating depends on both the nature of the extinguishing agent and the size of the extinguisher.

2.2 Location

[NFPA 10](#) and the *California Fire Code* ([24 CCR Part 9, Section 906](#)) require portable fire extinguishers

- Within easy reach of storage areas for flammables
- Throughout buildings, located so that a person does not have to travel more than 75 feet to reach one

Portable fire extinguishers are also required within 20 feet of a charging station for electric-powered industrial vehicles (for example, forklifts) ([24 CCR Part 9, Section 309.4](#))

Fire extinguishers must be conspicuously located and readily accessible in the event of fire. Locate them along normal paths of travel, including exits from areas. When possible, place them in a location where they will not be obscured from view. In large rooms or in areas where visual obstructions are unavoidable or are likely to occur in the future, provide a location sign above the extinguisher.

If you need assistance determining the number or type of fire extinguishers needed in your area, contact the SLAC fire marshal. A map of all extinguisher locations on-site is available ([SLAC Fire Extinguisher GIS](#)).

2.3 Purchase and Installation

Building managers are responsible for placing new fire extinguishers into service when required. To purchase and install a portable fire extinguisher:

1. Because fire extinguishers are pressurized, they are treated as hazardous materials for shipping purposes. To obtain one or more new fire extinguishers, contact the SLAC fire marshal.
2. When the fire extinguisher arrives, coordinate with the SLAC fire marshal to submit a work order to Facilities, through the [Facilities Service Request System](#), for installation of the fire extinguisher.
3. After Facilities installs the new fire extinguisher, the Stanford University Fire Protection Systems Group will place a tag on the new fire extinguisher and add it to the annual maintenance schedule.

2.4 Use and Training

Workers may use a portable fire extinguisher only if

- They have completed ESH Course 108, Fire Extinguisher Training ([ESH Course 108](#))
- The fire is small and they have verified that someone has reported the fire to 911
- They are certain they have the correct class of portable fire extinguisher for the class of fire (using the wrong type of extinguisher on a fire can intensify the fire or lead directly to personal injury)

2.5 Maintenance

2.5.1 Annual Service

Under the direction of the SLAC fire marshal, building managers must ensure portable fire extinguishers are serviced annually and the results documented on a tag affixed to each extinguisher. Extinguishers are typically serviced in the month they are due. Extinguishers are serviced by the Stanford University Fire Protection Systems Group.

2.5.2 Monthly Inspection

Portable fire extinguishers must be inspected monthly by the building manager or (if not attached to a building) the custodian. The inspection must be documented by initialing and dating the periodic inspection tag attached to the extinguisher. The inspection must verify the following.

1. The extinguisher is physically present and mounted or stored.
2. The extinguisher is fully charged (that is, the arrow, if a gauge is attached, is in the green zone).
3. The tamper seal is unbroken.
4. The extinguisher appears undamaged.
5. The extinguisher is accessible.
6. The inspection tag is less than a year old.

In areas of limited accessibility (such as accelerator housings), the inspections will be scheduled to coincide with periods when entrance to the area is allowed.

Building managers are responsible for initiating actions to address fire extinguisher deficiencies by submitting a non-routine service request.

2.5.3 Non-routine Service Request

Building managers report all non-routine needs for portable fire extinguisher servicing in their buildings, as well as any notices of overdue routine servicing, directly to the SLAC fire marshal (using the [fire-extinguisher listserv](#)). The fire marshal then contacts the Stanford University Fire Protection Systems Group.

2.5.4 Accessibility

Building managers will ensure that extinguishers remain accessible to trained personnel and that building occupants do not block access to extinguishers with furniture or storage. Some extinguishers are subject to repeated blockage. In such cases, building managers may wish to relocate the extinguisher or to have Facilities place cautionary tape on the floor to delineate a clear area (see Figure 1 below). The size of the area is at the building manager's discretion. A minimum length or width of 24 inches is recommended.

Groups such as Facilities that use unmounted extinguishers routinely for hot work and similar purposes will have a custodian who stores one or more extinguishers for loaning out to individuals as they need them for work purposes.



Figure 1 Example of Floor Taping for a Fire Extinguisher

3 Forms

The following forms and systems are required by these requirements:

- [fire-extinguisher listserv](#). Listserv for requesting fire extinguisher services
- [Facilities and Operations Project and Work Request System](#). System for requesting services from Facilities
- [SLAC Fire Extinguisher GIS](#). Map of fire extinguishers

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- Servicing and inspections must be documented by initialing and dating the periodic inspection tag attached to the extinguisher.
- The SLAC fire marshal maintains the record of SLAC service requests.

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 12, “Fire and Life Safety”](#)

- [Fire and Life Safety: Fire Protection Equipment Requirements](#) (SLAC-I-730-0A12S-004)
- [Fire and Life Safety: Fire Protection System Impairment Procedures](#) (SLAC-I-730-0A12C-002)
- [Fire Protection Resource Site \(FireFacts\)](#) (SharePoint)

Other SLAC Documents

- ESH Course 108, Fire Extinguisher Training ([ESH Course 108](#))

Other Documents

- Title 24, *California Code of Regulations*, “California Building Standards Code”, Part 9, “California Fire Code”, Chapter 9, “Fire Protection Systems”, Section 309, “Powered Industrial Trucks and Equipment”, Subsection 4, “Portable Fire Extinguishers” ([24 CCR Part 9, Section 309.4](#))
- Title 24, *California Code of Regulations*, “California Building Standards Code”, Part 9, “California Fire Code”, Chapter 9, “Fire Protection Systems”, Section 906, “Portable Fire Extinguishers” ([24 CCR Part 9, Section 906](#))
- National Fire Protection Association (NFPA) 10, “Standard for Portable Fire Extinguishers” ([NFPA 10](#))