



PORTABLE FIRE EXTINGUISHERS

Safety items are different from many of the other items we have around us; you need them only rarely, but when you do, they must work. A carbon monoxide (CO), smoke, and gas detector, for example, are rarely activated, but detect dangerous levels of CO, smoke, and gas to alert us of danger and save lives. Fire extinguishers too are rarely needed, but must be easily accessible, fully charged, and of the right classification to handle a specific fire.

Portable fire extinguishers can save lives and property. They are used primarily for putting out or containing small fires until the fire department arrives. Portable fire extinguishers have limitations and therefore it is imperative to consider your safety and the safety of others. If you feel the fire extinguisher cannot put out the fire or at least contain it, you should evacuate to a safe location.

Portable Fire Extinguishers

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Recently, in Muscatine, Iowa, a young girl received fire extinguisher training through the Muscatine fire department's fire extinguisher public education program. In so doing, she knew what to do after her mother left a pan on the stove with grease and it caught fire. She reacted properly to first get her family out of the house then grabbed a fire extinguisher, pulled the pin and gave it to her mother to extinguish the fire. This is a great example to share that training can work as designed to save property to severe damage from a fire. Are your company employees trained and prepared?



Standards

This guide is meant to point out some of the most common deficiencies when it comes to fire extinguishers. If you want to learn more about the standards for fire extinguishers refer to the following resources:

- NFPA 10 is the Standard for Portable Fire Extinguishers.
- OSHA standards 29 CFR 1910.175 is the standard for portable fire extinguishers.
- Federal Motor Carrier Safety Regulations - 49 CFR 393.95
- Standard Industry Codes
 - Ex. NFPA 96** Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
 - Ex. NFPA 58** Liquefied Petroleum Gas Code
 - Ex. NFPA 30** Flammable Liquids Code
- Local fire department, building inspector, or fire marshal
- Local building codes

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Types of Fires/Classification of Fire Extinguishers

The classification of fire extinguishers shall consist of a letter that indicates the class of fire on which a fire extinguisher has been found to be effective.

Class A Fires. Class A fires are fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.

Class B Fires. Class B fires are fires in flammable liquids, combustible liquids, petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases.

Class C Fires. Class C fires are fires that involve energized electrical equipment.

Class D Fires. Class D fires are fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.

Class K Fires. Class K fires are fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats).

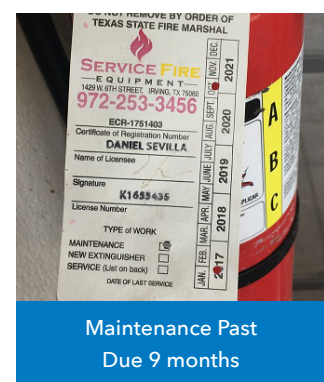
COMMON FIRE EXTINGUISHER DEFICIENCIES

1. Annual Maintenance

- a. Each fire extinguisher shall have a tag or label securely attached that indicates that maintenance was performed by a fire extinguisher service company. The tag or label at minimum should have the following information as seen below.
 - i. Month and year maintenance was performed
 - ii. Person performing the work
 - iii. Name of the agency performing the work
- b. Fire extinguishers shall be subjected to maintenance at intervals of not more than 1 year, at the time of hydrostatic test (12 year intervals), or when specifically indicated by an inspection discrepancy.



Maintenance Performed
within 12 months



Maintenance Past
Due 9 months

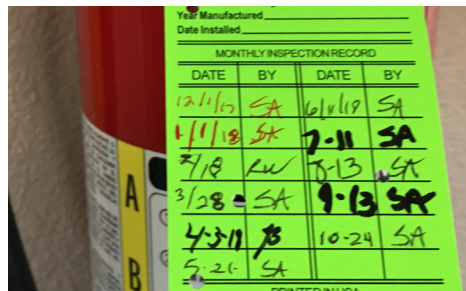
2. Monthly Inspections Not Performed (NFPA 10)

- a. Monthly inspections are required to be performed, which can be done by company personnel, for all fire extinguishers. Inspections should consist at least of the following:

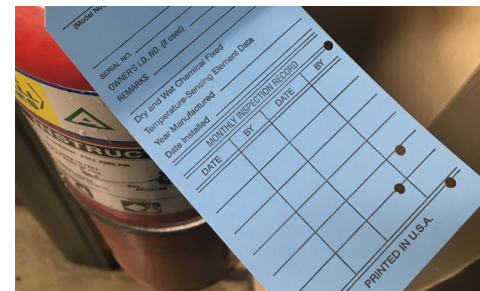
Portable Fire Extinguishers

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- i. Location in designated place
 - ii. Operating instructions are legible and facing outward
 - iii. Visibility of extinguisher or means of indicating extinguisher location
 - iv. Pressure gauge reading or indicator in the operable range or position
 - v. Any seal or tamper indicators are not broken, missing, or in need of replacement
 - vi. Access to extinguisher is not obstructed
 - vii. No evidence of corrosion or physical damage
- b. Documentation should be kept of each inspection. Where manual inspections are conducted, records for manual inspections shall be kept on a tag or label attached to the fire extinguisher, on an inspection checklist maintained on file, or by an electronic method. Records for manual inspections shall be kept to demonstrate that at least the last 12 monthly inspections have been performed.



Inspections Documented Monthly



Inspection Not Performed or Documented

3. Fire extinguishers losing their charge or discharged and not replaced.

The needle should be seen within the green shaded area on the gauge to show that the extinguisher is in the operable range or position.



Deficiency
Fire Extinguisher needing recharged.



Good
Needle located in Green section
in operable position

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4. Maintain clear access to fire extinguishers

Keep access clear to extinguishers at all times so they can be clearly seen and accessible when needed.



Don't pile or hang clothes over extinguisher



Don't place objects in front or on extinguisher

5. Class K Fire Extinguishers

Class K extinguishers should be available for cooking appliances that involve combustible cooking media (vegetable or animal oils and fats)



6. Installation of Extinguishers

Portable fire extinguishers other than wheeled extinguishers shall be installed using any of the following in accordance with NFPA 10:

- a. Securely on a hanger intended for the extinguisher
- b. Operating instructions face outward
- c. In a bracket incorporating release straps or bands supplied by extinguisher manufacturer
- d. In approved cabinets or wall recesses
- e. ≤40 lb. - Top of extinguisher not more than 5 feet above the floor.
- f. ≥ 40 lb. (except wheeled) - Top of extinguisher not higher than 3 ½ feet above the floor.
- g. In no case shall a hand portable extinguisher be less than 4 inches from the floor.
- h. Located where visible. Signs or other means can be used in close proximity to the fire extinguisher.

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- i. For Class A fires maximum travel distances shall not exceed 75 feet.
- j. For Class B fires maximum travel distances shall not exceed 50 feet.
- k. Class C fires extinguishers shall be located on the basis of anticipated Class A or B hazard.
- l. Class D- Maximum travel distance shall not exceed 75 feet.
- m. Class K - Maximum travel distance shall not exceed 30 feet from hazard to the extinguishers.



Fire extinguishers should be secured on a hanger intended for the fire extinguisher and not on the floor or ground.

7. Securement in Commercial Vehicles

The Federal Motor Carrier Administration requires fire extinguishers to be secured to prevent sliding, rolling, or have vertical movement.



Fire extinguisher not secured



Fire extinguisher secured in bracket

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8. Condition

Fire extinguishers should not show any evidence of corrosion. Age, weather conditions, salt, or fertilizer can affect the physical condition of the extinguisher. In some environments covers can be placed over fire extinguishers such as on vehicles to keep salt off or in fertilizer buildings to keep the fertilizer dust off that is corrosive to metal.



The gauge should be visible to determine if the extinguisher is fully charged or not.



9. Training

- a. OSHA requires companies that have provided portable fire extinguishers for employees to use shall provide an educational program to familiarize employees with the general principles of fire extinguisher use and hazards involved with incipient stage fire fighting.
- b. Training shall be provided upon initial employment and annually thereafter and documented for personnel who are responsible for using fire extinguishers.

Typically, fire extinguishers are fairly easy to use in the case of a fire. The recommended procedure for using most common types of fire extinguishers is by using the P.A.S.S. technique:

P.A.S.S. – Acronym for using a fire extinguisher

Pull the pin. Hold the extinguisher with nozzle pointing away from you and release the locking mechanism.

Aim low. Point the extinguisher at the base of the fire.

Squeeze the lever slowly and evenly

Sweep the nozzle from side to side.

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Training Resources

- Crum & Forster has video resources to assist with fire extinguisher training. Please send a request to Risk.Engineering@cfins.com for assistance.
- Contact your local fire department. Many fire departments may provide a service of instruction, live demonstrations, and hands-on use of fire extinguishers.

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