Portable Fire Extinguishers

Safety Meeting Packet

Many workers can identify where a fire extinguisher is located at the worksite, but how many of them know what type of fire the extinguisher was designed to combat or how to properly use it?

When a small fire occurs on the worksite, it is extremely important for employees to quickly assess the situation and to use the correct extinguisher in the appropriate manner.

Selecting the Proper Extinguisher

When selecting fire extinguishers for the work area, it is important to assess the potential hazards and identify the appropriate types to combat those hazards.

Classes

Fire hazards are divided into several classes based on the type of combustible material.

- Class A – Ordinary combustible materials, including paper, wood, cloth, and some rubbers and plastics.
- Class B – Flammable or combustible liquids, flammable gases, greases, and some rubbers and plastics.
- Class C – Energized electrical equipment.
- Class D – Combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.
- Class K – Combustible cooking fluids (oils and fats).

Some extinguishers are only used for one class while others may be used for multiple classes of fire. Using a fire extinguisher improperly can increase the hazard to the user and others in the area. For example, using a Class A extinguisher on a Class C hazard can subject the user to electric shock.

Extinguisher Types

The Occupational Safety and Health Administration (OSHA) requires that all portable fire extinguishers be approved by a nationally recognized testing laboratory. An approved device will be labeled to identify the class(es) of fire that it will extinguish.

- Air-Pressurized Water (APW) – Contain pressurized water and occasionally a detergent to produce foam. APW extinguishers are identified by their silver container and are designed for Class A fires.
- Carbon Dioxide (CO_2) – Contain highly pressurized Carbon Dioxide gas. The gas is non-flammable and displaces oxygen in the fire while cooling the burning material. CO_2 extinguishers have a hard horn on the end of the hose and are designed for Class B and C fires.

- Dry Chemical – Contain a chemical that coats the fire source with a layer of fire retardant powder. A dry chemical extinguisher is generally for Class B and C fires, but may also be rated for Class A.
- Dry and Wet Chemical – Used to combat kitchen fires (Class K) and are only intended to be used after a built-in hood suppression system has been activated. Many of the components are conductive, so make sure to shut off power to the appliance before operating the extinguisher.

The letter rating may also include a number that provides additional information. On an A-rated extinguisher, the number refers to the water equivalent content, at 1.25 gallons per unit. For example, a 2-A extinguisher equals 2.5 gallons of water. The number in front of the B rating indicates how many square feet can be extinguished by a non-expert user. For example, a 20-B extinguisher should cover a fire as large as 20 square feet.

Placement

The National Fire Prevention Association (NFPA) and OSHA provide recommendations and requirements for the placement of fire extinguishers in the workplace.

OSHA and NFPA require that extinguishers be placed within a certain distance of hazards.

- Class A –75 feet
- Class B – 50 feet
- Class C – Based on pattern for existing Class A-B hazards
- Class D – 75 feet
- Class K – 30 feet

The NFPA Standard for Portable Fire Extinguishers, NFPA 10, provides additional recommendations for the placement of extinguishers.

- Locations that contain mainly Class A combustible materials should have one 2-A extinguisher for every 3,000 square feet.
- NFPA recommends that extinguishers be placed at variable distances within the OSHA requirement based on the amount of hazard and type of extinguisher used.

Hazard	Type	Max. Spacing
Light: Small amounts of flammable liquids.	5-B	30 feet
	10-B	50 feet
Ordinary: More flammable liquids than low hazard areas.	10-B	30 feet
	20-B	50 feet
Extra: Large quantities of flammable liquids.	40-B	30 feet
	80-B	50 feet

Fire extinguishers should be mounted on brackets or in wall cabinets with the handle between 3½ and 5 feet above the floor. Larger extinguishers should be placed with the carrying handle 3 feet above the floor.

Maintenance

Employers are responsible for periodic inspection of all fire extinguishers. An employer must perform visual inspections monthly, and a maintenance check annually. The employer must ensure that there is equivalent protection provided when an extinguisher is out for maintenance or testing.

Extinguishers must also undergo hydrostatic testing to determine if cylinders or hose assemblies have leaks or flaws. Hydrostatic testing must be done according to the schedule found in 29 CFR 1910.57(f)(3) by an individual with suitable testing equipment and facilities.

Operation

Before fighting a fire, it is important to assess the risks and determine if the fire can be managed with a portable extinguisher.

- Call the fire department and sound the fire alarm, if appropriate.
- Identify an evacuation path.
- Select the appropriate extinguisher.

Follow the four-step P.A.S.S. technique to use an extinguisher:

Pull the Pin

Aim Low – point at the base of the fire

Squeeze the handle to discharge the extinguisher

Sweep from side to side at the base of the fire

Training

The employer must develop a program to educate employees on general fire extinguisher principles and hazards involved with fire fighting. The education program must be provided at the time of hire and at least annually thereafter. Employees who are designated to use fire fighting equipment must also be trained on appropriate use of the equipment at the time of designation and at least annually thereafter.

It is recommended that employers educate their workers about the selection, use, and maintenance of fire extinguishers.

- Discuss the fire hazards present in the workplace, and identify the class that each hazard falls into.
- Review the types of portable extinguishers available and where they are in the workplace.
- Identify the labeling requirements on extinguishers.
- Review the OSHA and NFPA fire extinguisher location requirements and recommendations.
- Describe the maintenance process and schedule.
- Review the fire protection methods used when extinguishers are out for maintenance.
- Review the procedures when a fire is detected to notify other employees and the fire department.
- Identify decision process for evacuation versus fighting the fire.
- Explain the P.A.S.S. process for fire extinguisher discharge.
- Review the education program for all employees and those who are designated to fight fires.

For additional information, please review the OSHA Portable Fire Extinguishers Standard, 29 CFR 1910.157.

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Safety Meeting Attendance Acknowledgement

Company Name _____

Department / Division _____

Meeting Date & Time _____ _____ ☐ AM ☐ PM

Meeting Location _____

Name & Title of Individual Conducting Meeting _____

Key Meeting Discussion Points / Important Reminders:

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Internal Procedures Reviewed:

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By signing this document, you confirm your attendance at the meeting and acknowledge the issues addressed above!

Employees in Attendance		
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(Sign):	(Sign):	(Sign):
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Employees not present: _____

Suggestions/Recommendations to improve workplace safety and health: _____

Actions Taken: _____

Manager/Supervisor: _____ Date: _____

Disclaimer:

The information provided above was assembled using multiple resources. However, these materials do not contain ALL the information available regarding the required safety standards under local, provincial, state, or federal law for your industry.