

Using a Fire Extinguisher Safely

5-Minute Talk

Overview of topic

Fire is the most common type of emergency for which businesses must plan. One way to limit the amount of damage due to fires is to make portable fire extinguishers available in the workplace. When used properly, fire extinguishers can save lives and property by putting out a small fire or controlling a fire until additional help arrives. A critical decision for employers is whether or not employees should fight a small fire with a portable fire extinguisher or simply evacuate.

Different types of fire extinguishers are designed to fight different types of fire. The three most common types of fire extinguishers are: air pressurized water, CO₂ (carbon dioxide), and dry chemical. Multi-purpose dry chemical is suitable for use on class A, B, and C.

Because of the deadly danger of fire, it's important employee know how to size up a fire and how to respond in a fire emergency. Controlling the consequences of a fire depends on preparing for it. Employee must always:

- Keep work areas clean and clutter free.
- Know how to handle and store chemicals.
- Know what you are expected to do in case of a fire emergency.
- Call professional help immediately; don't let a fire get out of control. (This applies to a fire wherever you are.)
- Know what chemicals they work with –this information may need to be passed onto fire fighters on the scene of a chemical fire concerning the type of hazardous substances involved.
- Be familiar with your company's emergency action plan for fires.

When a fire starts

When a fire starts, employee must think only of their safety and the safety of others. Explain that when a fire is out of control, workers don't know what is burning, or they have not been trained to use extinguishers, they must sound the fire alarm, then call for emergency help from a safe place.

If an employee has been trained to use fire extinguishers, and the fire is small enough to be extinguished by a hand-held extinguisher, the employee can try to put out the fire with the extinguisher. However, they can fight the fire only in these situations:



- Everyone is evacuating the building.
- The fire department is being called.
- The fire is small and confined to the immediate area where it started.
- The fire can be fought with the employee's back facing a safe escape route.
- The extinguisher is rated for the type of fire to be fought (see below), is large enough for the fire, is nearby, fully charged, and in good working order.

How to use the fire extinguisher

To use a typical extinguisher, hold it upright, pull the pin, stand back eight or ten feet, aim at the base of the fire, squeeze the handle, and sweep from side to side.

Sweep the fire base with the extinguishing agent. If you aim high at the flames, you won't put out the fire. Remember too, that most fire extinguishers have a limited operation time, only 10-20 seconds, so you have to act fast and spray correctly at the base of the fire, not at smoke or flames.

Be aware of smoke and noxious fumes. These fumes enter the lungs and leave persons unconscious and at the mercy of the smoke and flames. They are already unconscious or dead before flames reach them.

Fire extinguisher types

The National Fire Protection Association (NFPA) has classified five general types of fires, based on the combustibles involved and the extinguisher needed to put them out. Each has a unique symbol and color to help identify the type of fire and the correct response to it. Fire extinguishers are coded according to this system, so anyone who might respond to a fire with an extinguisher must be fully trained on this system. Fire types are:

- **Class A**, the most common kind of fire, involves ordinary materials such as wood, paper, rubber, and plastics. A green triangle represents a Class A fire. The common extinguisher agent is water, but dry chemicals are also effective. Do not use carbon dioxide extinguishers and those using sodium or potassium bicarbonate chemicals on Class A fires.
- **Class B** fires are denoted by a red square. Flammable liquids, gases and greases make up this class. They are harder to fight and require a special kind of extinguisher. Use foam, carbon dioxide, and dry chemical extinguishers on Class B fires. Also, water fog and vaporizing liquid extinguishers can be used.
- **Class C**, electrical fires, are the most common sources of industrial fires. A blue circle indicates a Class C fire. Carbon dioxide and dry chemical extinguishers are appropriate for this type of fire. Never use foam or water-type extinguishers on these fires.



- **Class D** fires are caused by combustible metals including magnesium, titanium, zirconium, and sodium. They are represented by a yellow star symbol. These fires require specialized techniques to extinguish them. None of the common extinguishers should be used since they can increase the intensity of the fire by adding an additional chemical reaction.
- **Class K** fires are the result of the combustion of cooking oils and fats. Commercial kitchens usually have special extinguishers for Class K fires. They are represented by a black hexagon or a black square with an icon of a flaming pan.

Employee training

If there is a total evacuation of the workplace at the time of a fire emergency and when fire extinguishers are not provided, the requirements of §1910.157 do not apply.

If there is a partial evacuation of the workplace at the time of a fire emergency with designated employees remaining behind to operate critical plant operations or to fight fires with extinguishers, then the employer is exempt from the distribution requirements of §1910.157

If all employees in the workforce are permitted to use fire extinguishers, then all requirements under §1910.156 and §1910.157 apply.

Employees who remain behind to perform fire fighting functions or members of a fire brigade must be trained in their duties, especially becoming familiar with the locations of fire extinguishers.

Training tips

Cover specific elements of your fire evacuation procedure. Inform employees of the location of exits in your facility and the areas where they should gather to account for everyone after an evacuation.

Be specific about the kinds of fires likely to be encountered at your facility. Chemical fires are of special concern because of their high toxicity and high volatility. Make sure employees understand that a chemical fire may quickly spread out of control, and only trained people should combat such fires.

Where to go for more information

OSHA regulations 29 CFR 1910.156, Fire brigades.

OSHA regulations 29 CFR 1910.157, Portable fire extinguishers.

