

## Select the correct fire extinguisher for your needs

By [Robb Slawski](#)



Choose the right extinguisher for your situation.

*Fire extinguishers can be an effective tool, but only when you select the correct type for your needs; install them in the most effective locations; and learn the proper way to use them. This three-part series covers the basics of fire extinguishers.*

### Part 1 of 3 –

A portable fire extinguisher is an effective first line of defense in controlling small fires within your home or business. For maximum effectiveness, choose the correct extinguisher for your needs.

To select the proper fire extinguisher, first consider:

- what materials could fuel a fire
- how much of that material is available
- who will use the extinguisher
- the capacity of the extinguisher (see classifications below)
- whether chemicals at the scene could react with the extinguishing agent

### FIRE HAZARD CLASSIFICATIONS

In its [NFPA 10, Standard for Portable Fire Extinguishers](#), the National Fire Protection Association (NFPA) identifies five primary classifications of fire hazards. Identifying these can help you select the appropriate extinguisher:

**Class A** – ordinary combustible materials, such as wood, cloth, paper, rubber and plastic

**Class B** – flammable and combustible liquids and flammable gases

**Class C** – energized electrical equipment

**Class D** – combustible metals, such as potassium, sodium and magnesium

**Class K** – cooking greases and fats

Class A, B and C extinguishers are often found in homes and businesses; Class D, in factories; and Class K, in commercial kitchens. In addition to the fire hazard classification, a numerical rating measures the extinguishing potential of type A and B extinguishers. The larger the number, in general, the larger the fire or fuel load the extinguisher can accommodate. You select the extinguisher size based on the fuel load and hazards of the area as well as how far you must travel to reach the extinguisher.

## **FIRE LOAD**

Consider the three types of occupancy hazard (fire load) in a building when choosing an extinguisher:

- **Light hazard**, with few combustibles: offices, churches, school rooms and assembly halls.
- **Ordinary or moderate hazards**, with combustibles in an ordinary form or small quantity: mercantile storage and displays, auto showrooms and parking garages.
- **Extra or high hazard**, with substantial quantities of combustibles that readily support combustion: woodworking, vehicle servicing, product display showrooms and warehouses with high-piled combustibles

## **SELECTING THE EXTINGUISHER TYPE**

Evaluate your fire hazards to select the most suitable extinguisher. If you face more than one fire hazard, select an extinguisher that can control all hazards present while avoiding any that cannot be used in your particular situation. For example:

- Fire extinguishers intended for use on Class B and C fires can't be used on Class A fires.
- Extinguishers may increase the fire severity when used on a fire of a different hazard type. Water-based Class A extinguishers can't be used on Class B fires, as the flammable liquids would float on top of the water.
- Extinguishers may injure users if used to fight fires of a different class. Water-based Class A extinguishers used on a Class C electrical fire creates a shock or electrocution hazard because of the conductivity of the water.
- Class D extinguishers, designed to control a specific metal fire, may be ineffective or may exacerbate a fire on a different metal.
- Class K extinguishers were designed to control kitchen fires. A Class A, B or C extinguisher may not be able to do the job.

With proper training, selection and placement, fire extinguishers can be a valuable asset in a time of need.

**Part 2:** [Correctly place fire extinguishers for optimum use](#)

**Part 3:** [Training: is key to correct fire extinguisher usage](#)

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## Correctly place fire extinguishers for optimum use

By [Robb Slawski](#)



Place extinguishers so that you have a clear path to the exit.

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### Part 2 of 3 –

Fire extinguishers are a critical component of your building's overall fire protection system. With properly trained personnel and correctly placed and maintained extinguishers, these devices can suppress a fire in the early stages.

Fire extinguisher servicing contractors can advise you about placement and maintenance of extinguishers, but it's beneficial to understand the basics.

### **FIRE EXTINGUISHER DISTRIBUTION**

Extinguishers should be:

- located along the normal travel paths in your facility, including exit paths
- highly visibility
- easily accessible
- available for immediate use

Maximum travel distances to Class A or D extinguishers should not exceed 75 feet; Class B, 50 feet; and Class K, 30 feet. Maximum travel distances to Class C extinguishers, for electrical devices, should be no greater than for the same hazards (Class A or B) without electricity. Certain circumstances may require shorter travel distances; your fire extinguisher servicing contractor can advise you.

### **INSTALLATION OF PORTABLE FIRE EXTINGUISHERS**

For the A rating, 1A is equal to one gallon of water being distributed from the unit. Class A hazard extinguishers are rated per A unit, 1A to 40A, and can protect a maximum floor area per unit. For a light hazard (office exposure), the floor area is 3,000 square feet; an ordinary hazard (retail store, light manufacturing), 1,500; and for extra hazard (car repair, wood working, spray painting or coating), 1,000. The maximum floor area of any extinguisher regardless of the A rating is 11,250 square feet.

For the B rating, 1B is equal to an actual fire test conducted with the extinguisher on one square foot of a burning liquid, one-quarter inch deep. Class B hazard extinguishers are rated per B unit, 5B to 80B, but do not have a maximum floor area per extinguisher.

Class C extinguishers are required for energized electrical equipment. They are classified as an A or B hazard, so they should be sized and located based on that designation.

Class D extinguishers are for fires involving combustible metals. The size of the unit is based on the specific combustible metal present, its physical particle size, the area to be covered and recommendations from the extinguisher manufacturer.

Class K extinguishers are designed for fires involving combustible cooking oils.

### **INSPECTION, MAINTENANCE AND RECHARGING**

Portable fire extinguishers are required to be visually inspected when initially placed in service and monthly thereafter. This inspection ensures the extinguisher is still in its place and has:

- no obstructions
- intact safety seals
- no physical damage

If you discover a problem during monthly inspections, correct the issue immediately.

At least annually, an approved extinguisher servicing company should perform maintenance that includes a thorough examination of mechanical parts, extinguishing agent and expelling means of each unit. Certain extinguishers also require an internal examination, depending on the means of propelling the agent from the container.

All fire extinguishers must be pressure-tested to prevent unwanted failure of the cylinder. As a general rule, pressurized water, carbon dioxide and wet chemical extinguishers should be tested every five years; dry chemical extinguishers, every 12 years.

Fire extinguishers in the home should be placed strategically [in the kitchen, workshop or garage](#) and near an exit. Use one only when feasible to knock down a small fire, AFTER you have called 911 and moved everyone to safety. When using a home extinguisher, [keep your back to a clear exit for easy escape](#). Remember that your first priority is to see that everyone gets out safely.

**Part 1:** [Select the correct fire extinguisher for your needs](#)

**Part 3:** [Training: is key to correct fire extinguisher usage](#)

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## Training is key to correct fire extinguisher usage

By [Justin Yates](#)



Invest the time in training to correctly use a fire extinguisher.

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### Part 3 of 3 –

Once activated, a fire extinguisher typically provides less than 30 seconds of use. That's why proper training and application are critical to ensuring effectiveness.

Whether in your home or place of business, your first action when a fire occurs should be notification:

1. **Call the local fire department**
2. Activate the alarm system
3. Ensure that everyone begins evacuating the building

If the fire is still in the early stages, consider using a fire extinguisher. Before attempting to suppress the fire, be sure to verify that you have a safe evacuation route out of the building and that the smoke and heat are not too great to keep you from getting to safety.

Remember the acronym PASS when using the extinguisher:

- **P** – Pull the Pin
- **A** – Aim the extinguisher at the base of the fire
- **S** – Squeeze the release handle to activate the extinguisher
- **S** – Sweep from side to side until the fire appears to be out

If the fire continues to grow, evacuate the building and allow the fire department to suppress the fire.

Remember: If you have any doubt, GET OUT!

According to the Occupational Safety and Health Administration, employees should be familiar the general principles of a fire extinguisher and the hazards involved. Many local fire departments offer hands-on training and training aids to local businesses. Reach out to your local fire department and

see how they can assist your training needs. More information on fire extinguisher use is available from the [Occupational Safety and Health Administration](#).

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