

The Basics of Fire Protection

As the third leading cause of accidental deaths in the US fire is, nonetheless, one of the most preventable. A little precaution goes a long way.

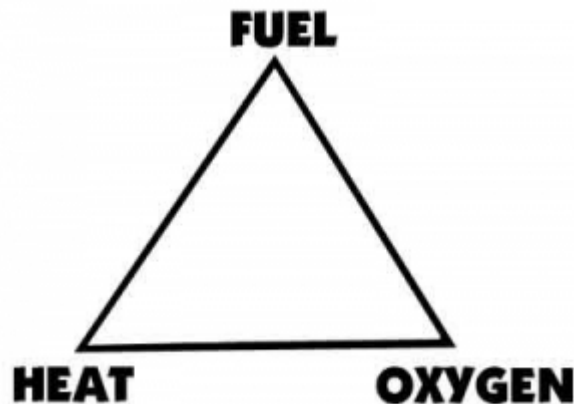
The Basics of what it takes for fire to start

Fire needs three basic elements to start. This is called the fire triangle. If anyone of the three elements is missing, fire will not ignite, or, if it is already burning, removing one of the three will quench the flames. The three elements are:

Fuel: Fire needs something to consume. Fuel can be a solid, a liquid or a gas

Oxygen: Fire needs oxygen to burn. Remove the oxygen and the flames go out. This is often what is being done when we talk about “quenching” a fire. An atmosphere with less than 16% oxygen will not allow a fire to burn.

Heat: Think “energy”. Without the energy needed to burn the flames die.



How to fight the fire

How you fight a fire depends on which class it is so let's look at the different classes and what they mean.

Class A fires - Make sure the fire extinguisher is a class ABC fire extinguisher. If no fire extinguisher is present, use water or pressured water. Never use a class BC or chemical fire extinguisher (CO2 fire extinguisher) or dry chemical fire extinguisher on a class A fire.

Class B fires – Smother class B fires. Remove the oxygen. DO NOT USE WATER. Water will cause the flaming liquid to flow and therefore, spread. Use foam, CO2, dry chemical or Halon or Halotron I fire extinguisher on this type of fire.

Class C fires – Smother electrical fires with a non-conductive agent. DO NOT USE WATER as water is conductive. CO2, dry chemical, and Halon or Halotron I (The EPA is phasing it out Halon 1211 in favor of Halotron I).

Class D fires – CO2 and Halon or Halotron I fire extinguishers are preferred because they don't leave a coating on the metal. Especially with electronics, other fire extinguishers leave a white coating that is difficult to remove and may damage electronic equipment, electrical wiring and some other metals.

Class K fires – This is a new classification that was added in 1998 (Standard 10) and which is used to refer to kitchen fires.

Figuring out which fire extinguisher is which

All fire extinguishers are labeled accordingly.

Most extinguishers are labeled for use on several different classes of fires such as AB, BC and ABC.

Additionally, Class A and B extinguishers have a number that indicates how large a fire that particular extinguisher can put out (In class B fire extinguishers, the number indicates the number of square feet that particular fire extinguisher can put out).

Class C extinguishers are for electrical fires as we mentioned. The “C” classification is easy to remember, “C” for “conductive” (actually meaning for fires that might be conductive, in other words, electrical in nature)

Class D extinguishers (Usually sodium chloride or Powdered copper metal) do not carry a number, just the letter. They are usually found in labs and other areas where metal fires might be a hazard.

Using a fire extinguisher properly

Make sure that you know where the fire extinguishers are before you need them.

First of all, read and make sure you understand all the instructions listed on the fire extinguisher. Do this now, not when you have a fire on your hands. When a fire is burning and you need to get it extinguished is not the time to start reading directions.

Having done that, simply remember the acronym PASS.

P A S S

Pull – Pull the pin. Fire extinguishers have a pin on the top to keep the “trigger” from accidentally discharging the contents. You must remove the pin in order to activate the extinguisher.

Aim – Aim at the base of the fire. The top of the flames is not the target, the base is. The base is where the three elements of the fire triangle are present. Aim the base of the fire, where the fuel is.

Squeeze – Squeeze the lever, slowly. This will discharge the fire fighting agent. When you release the “trigger” the discharge will start.

Sweep – Sweep the spray back and forth, side to side across the base of the fire until the fire is out.

Always operate the fire extinguisher from a safe distance, slowly moving forward toward the fire. Standing too close to the fire when activating the fire extinguisher may cause flaming material to “bounce” off or project out, further spreading the fire.

Once the fire has been extinguished, monitor the area for several minutes to make sure that nothing reignites.

Also make sure you replace a spent fire extinguisher immediately after you’ve used it so that you have a fully charged extinguisher the next time you need one.

In spite of the fact that we’ve been talking about different types of fire, different types of fire extinguishers and how to use a fire extinguishers, you need to understand that there are times when you should not use a fire extinguisher. **ONLY** use a fire extinguisher when the fire is small and easily contained, when it has just started and hasn’t started spreading too far.

When not to try to fight a fire

Being aware and proactive with regards to fire also means knowing that there are times when you should get out, get away, call the fire department and/or leave the area.

1. When the fire is spreading rapidly. Fires can spread rapidly once they get started (a fire can double in size in 2-3 minutes). You need to be fully in control at all times. If you feel you might not be able to contain the fire, get out.

2. When the fire is beginning to block your exit or way out. Only fight a fire when you are sure that you can get out if the fire suddenly spreads. Make sure you can always get out.

3. When the fire is possibly moving somewhere not immediately visible. Fires can appear to be contained or extinguished when they are, in fact, spreading behind the walls, in the ceilings or under the floor.

4. When the fire extinguisher is spent. Once the fire extinguisher is empty, unless the fire is fully contained, you need to either get another fire extinguisher or call for help.

5. When you have the wrong extinguisher. Don’t try to make do with a fire extinguisher that isn’t meant for the type of fire you fighting. The wrong fire extinguisher might actually do more harm than good and spread the fire rather than extinguish it.

6. When you aren't sure what type of fire you are dealing with. Don't take the chance that you might start using the wrong extinguisher.

7. There is too much smoke around you. Smoke inhalation can quickly overcome you and cause you to pass out. Seven of ten fire-related deaths are from smoke and poisonous gas inhalation.

Although we have covered a lot of ground in this article, we haven't even begun to cover all that needs to be said on the topic.

We have concentrated on the types of fires, the types of fire extinguishers, how to use the fire extinguisher and when not to use the fire extinguisher. Along with "fire extinguishing", however, is fire fighting. This means putting together a plan for your home or business.

Fire Prevention at home and at work

- Put together an escape plan and practice it. This is especially true if you have small children. Each one should be taught how to get out, where to go, etc... The very last thing that you need is young children wandering around in a smoke-filled house looking for you. Teach them how to get out and where to go.
- Have a meeting place where everyone should go. Make it far enough away from the house so that it won't potentially be in a danger zone if there is a fire in the house.
- Purchase escape ladders for second story bedrooms. Teach family members how to use them. Do not count on being able to get out through the door, it may be blocked by fire, debris or jammed shut.
- Inspect all potential sources of fire. Frayed wires, heaters, clogged dryer vents, improperly maintained heating equipment, etc... are all areas that you need to keep an eye on.
- Unplug appliances whenever possible.
- Make sure that your fire alarms and/or smoke detectors are properly installed and maintained.