

A guide to classes of Fire

There are multiple classes of FIRE as explained below

- Class A - fires involving solid materials such as wood, paper or textiles.
- Class B - fires involving flammable liquids such as petrol, diesel or oils.
- Class C - fires involving gases.
- Class D - fires involving metals.
- Class E - fires involving live electrical apparatus. (Technically 'Class E' doesn't exist however this is used for convenience here)
- Class F - fires involving cooking oils such as in deep-fat fryers.

Types of extinguishers relevant to Fire class

	 A	 B	 C	 D		 F
	Wood, paper, plastics, soft furnishings etc.	Flammable liquids, petrol, oil etc.	Flammable gases, propane, butane, methane etc.	Metals; aluminium, magnesium, titanium, swarf etc.	Electrical apparatus, computers, phone chargers etc.	Cooking oils & fats
AFF FOAM	✓	✓				
WATER	✓					
WET CHEMICAL	✓					✓
CO2		✓			✓	
DRY POWDER	✓	✓	✓		✓	
L2 & M28 POWDER				✓		

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Water extinguishers

Water extinguishers are one of the most cost-effective ways to fight Class A fires, those fuelled by solid materials such as paper, wood and textiles.

There are four different types of water extinguishers: water jet, water spray, water with additives and water mist or fog.

- Water jet extinguishers work by spraying a jet of water at the burning materials, cooling them and preventing re-ignition. They should not be used on live electrical equipment.
- Water spray extinguishers use a very fine spray of water droplets, each droplet is surrounded by air which is non-conductive. Most water spray fire extinguishers carry a 35 kV dielectric test approval which means they have been tested on a 35,000 Volt electrical source at one meter.
- Water extinguishers with additives are water extinguishers with foaming chemicals added. The water loses its natural surface tension meaning that it can soak into the burning materials more effectively. Adding the chemicals to the water means that a smaller extinguisher can produce the same fire rating as a larger, water only, extinguisher.
- Water mist, or fog, extinguishers apply water in the form of mist, or fog, the droplets are much smaller than those from the water spray extinguisher. The smaller the droplet, the larger its surface area in relation to its size, the quicker the droplet evaporates which absorbs the heat energy faster. The downside is the smaller the droplet the less it weighs and therefore the less powerful the cloud of water.

All water extinguishers have a red label.

Foam extinguishers

Foam fire extinguishers can be used on Class A and B fires. They are most suited to extinguishing liquid fires such as petrol or diesel and are more versatile than water jet extinguishers because they can also be used on solids such as wood and paper. The foam extinguishes liquid fires by sealing the surface of the liquid, preventing flammable vapour reaching the air and starving the fire of fuel. They are not suitable for use on free flowing liquid fires.

Foam extinguishers have a cream label.

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Powder extinguishers

Powder extinguishers are a good multi-purpose fire extinguisher because they can be used on Class A, B and C fires. They can also be used on fires involving electrical equipment however, they do not cool the fire so it can re-ignite. Powder extinguishers can also create a loss of visibility and may create breathing problems. They are not generally recommended for use inside buildings unless there is absolutely no alternative.

Powder extinguishers have a blue label.

Carbon dioxide extinguishers (CO₂)

CO₂ extinguishers are ideal for places with a lot of electrical equipment such as offices or server rooms because they are safe to use on fires involving electrical apparatus. Carbon dioxide extinguishers do not leave any residue, unlike a foam extinguisher. They can also be used on Class B fires, those involving flammable liquids such as paraffin or petrol. CO₂ extinguishers work by smothering the fire and cutting off the supply of air.

Carbon Dioxide Extinguishers (CO₂) have a black label.

Wet chemical extinguishers

Wet chemical extinguishers are suitable for use on Class F fires involving cooking oils and fats, such as lard, olive oil, sunflower oil, maize oil and butter. They are extremely effective, when used correctly. The wet chemical rapidly knocks the flames out, cools the burning oil and chemically reacts to form a soap-like solution, sealing the surface and preventing re-ignition. Although they are primarily designed for use on Class F fires, cooking oils and deep fat fryers. They can also be used on Class A fires (wood, paper and fabrics) and Class B fires (flammable liquids).

Wet chemical extinguishers have a yellow label.

Fire blankets

Fire blankets are primarily for use on hot oil fires such as frying pans or small deep fat fryers. They can also be used on someone whose clothing has caught fire. They work by smothering the fire, stopping access to the oxygen fuelling it and extinguishing it.