HAWTHORN

FIRE PROTECTION Ltd

FIRE EXTINGUISHER GUIDE

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Selecting the correct fire extinguisher:

Do you really need a fire extinguisher?

Chances are, yes!
If your premises are used for anything other than purely domestic activities, you are likely legally required to have at least one fire extinguisher installed and properly maintained. This doesn't just apply to traditional workplaces—home-based businesses can also fall under these requirements!

Knowing how to use an extinguisher is just as important as having one. Choosing the right type matters too, because different extinguishers are designed for different kinds of fires.

According to the Home Office, the fire and rescue service attended over 140,000 fires last year alone. These incidents caused hundreds of casualties and over £90 million worth of property damage. Being prepared really can make a huge difference.

This guide is to help walk you through the main types of fire extinguishers, how to recognise them, and which situations they're designed for. We'll also share simple step-by-step instructions so you'll feel confident using one in an emergency. With our experience, we're here to help you protect both your property and the people in it.

Remember: not all extinguishers are created equal.

Each is built for specific types of fire, and using the wrong one could be ineffective—or even dangerous.

That's why understanding what to use, how and when, is so important.

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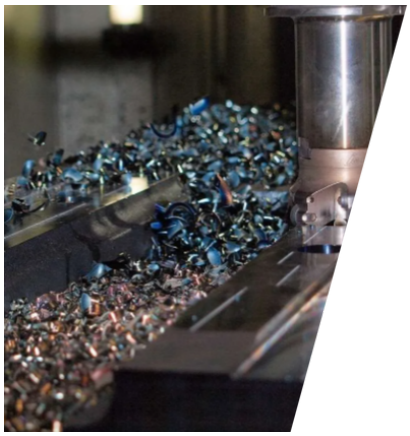
Types of Fire

Before you can choose the correct fire extinguishers for your premise, you first need to understand which clasification of fire you are most likely to be at risk from.

Fires are grouped into six different Classes
A, B, C, D, F & Electrically Started



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Understand the classes

Let’s take a look at the six different classes to understand what they are

Class A fires are the most common that you might encounter within your premises. They involve solid combustible materials, typically; Wood, paper, plastic & textiles.
Class A fires are easily fought by the use of Water based or Powder Fire Extinguishers.

Class B fires are events involving flammable liquids and liquefiable solids, such as Fuel, Paint, Oils, Alcohol & Wax.
Class B fires are effectively extinguished with a Powder or Foam Fire Extinguisher.

Class C fires occur when flammable or combustible gases such as Methane, Propane or Natural Gas are near an ignition source.
Your Fire Risk Assessment will identify the correct extinguisher to use in this instance and also recommend the correct training and course of action to take.

Class D fires are mostly encountered in an Industrial environment. where use of combustible metals such as Magnesium, Lithuim and Titanium are commonly worked with. A specially designed powder has to be used for these fires to ensure a Class D fire is safely and effectivley extinguished.

Class F fires happen mostly in commercial kitchens and similar spaces where cooking oils, grease and fats are being heated to high temperatures.
Due to the dangerous nature of Class F fires and how quickly they can be spread if the wrong extinguisher is used, we highly reccomend that a Wet Chemical Fire Extinguisher is used.

A common misunderstanding is that electricity is a class of fire. Electricity is an ignition source. It cannot be extinguished.
To tackle an electrically started fire. You must first isolate the appliance that is burning, and then choose the correct extinguisher for the burning material.

Types of Fire Extinguisher

Fire extinguishers are available in a vast assortment of sizes, types and capabilities. Each fire extinguisher is tested for its suitability against each classification of fire and how well it can tackle it. If successful, it can have the fire classification icon displayed on the body of the cylinder.

This guide is a general guide to the types of fire extinguishers commonly available. There may be some versions that can successfully tackle multiple types of fires that we have not included in this document.

WATER

Water Fire Extinguishers are available in 4 different versions.

Jet - The basic form of water extinguisher, these extinguishers can squirt the water in a concentrated stream allowing you to fight a fire from quite a distance. Ideal for corridors or Warehouse racking.

Spray - Allowing for a slower and gentle, shower of water to be controlled over a fire.

Mist - This creates a very fine mist that not only fights a fire, but also clears smoke from the air and cools the surrounding area.

Additive - Water on its own is a powerful firefighting medium, but it can be better with additives. Some additives allow the extinguisher to operate in much colder temperatures, while others break down the surface tension and allow the water to soak deep into organic material.

All water extinguishers are totally red with white writing stating “Water”

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FOAM

Foam Fire Extinguishers are available in 4 different versions.

Jet - The basic form of foam extinguisher, these extinguishers can squirt foam in a concentrated stream allowing you to fight a fire from quite a distance.

Spray - Allowing for a slower and gentle, shower of foam to be controlled over a fire.

Mist - This creates a very fine mist that not only fights a fire, but also clears smoke from the air and cools the surrounding area.

Additive - foam on its own is a powerful firefighting medium, but it can be better with additives. Some additives allow the extinguisher to effectively fight alcohol, which typically breaks down the foaming solution. Alcohol Resistant Foams are able to maintain their functionality and density of foam in high alcohol fires involving polar solvents in environments such as breweries and distilliaries

Foam Extinguishers are typically Red in colour but will have a cream coloured band saying foam.

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POWDER

Powder Fire Extinguishers are a very versatile equipment in the right situations.

They typically have a low cost associated with them and can be used almost anywhere.

They can fight a broad range of fire classifications, but their use should be carefully considered depending on your surroundings.

These extinguishers contain a very fine powder, that when released creates a dense cloud. This can affect your environmental awareness and potentially cause breathing difficulties when released indoors.

Powder fire extinguishers are typically red in colour with a Blue band saying Powder.

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POWDER

Special application Powder fire extinguishers are for specific risks. These are Class D flammable metal risks.

They have a very unique hose and nozzle arrangement that allows the powder to gently cascade over the burning metal to create a heaped mound and smother the burning metal.

These extinguishers are available in two different types;

L2 / SPM TEC - Specially formulated powder for metals such as Aluminium, Zinc, Sodium, Magnesium, Fracium and Lithium, Potassium, Rubidium and Caesium.

It has a firefighting range of 500°C to 2000°C and melts at 550°C to form a crust and smother the fire.

M28 / SPM PYRO - for heavy metals such as Plutonium, Titanium, Zirconium, Copper, Cobalt and Manganese that burn at temperatures more than 5000°C.
This powder melts and fuses at 1200°C making it very effective on Alkali Metals and their alloys.

The Colour banding on these special application powders is Purple

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WET CHEMICAL

Wet Chemical Fire Extinguishers are very effective in kitchen environments where cooking oils, grease and fats are heated to high temperatures. The thick wet chemical agent foam will smother any oil fire.
Through a chemical reaction called Saponification, this chemical reaction turns the chemical agent into a soapy solution that smothers a fire, cutting off its oxygen supply, isolating the vapours, and cooling the oil down below its flash point.

Spray - Allowing for a slower, gentle shower of agent to be controlled over a fire.

Lance - This creates a very fine mist that not only fights a fire, but also clears smoke from the air and cools the surrounding area.

Wet Chemical Extinguishers are typically Red in colour but will have a Yellow coloured band saying Wet Chemical.

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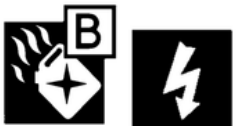
CO2

CO2 portable fire extinguishers are immediatly recognisable due to their unique shape and size.

CO2 is a high-pressure gaseous extinguisher, so the body of the product needs to be able to withstand these pressures for a long time. For this reason, they are made from a much thicker metal body and have a typically slim and narrow appearance in comparison to the other fire extinguishers.



CO2 fights fires by replacing oxygen the the area it is released. This makes it very effective at fighting electrically started fires deep inside equipment as the gas can easily work its way through all the little gaps and spaces.

It should never be used in confined areas. CO2 can cause asphyxiation and lead to blood poisoning or even death.

Due to the rapid release of the gas, it can also cause static shocks and freeze burns to the operator.

CO2 does not have an associated Class A rating and is ineffective against these types of burning materials.

CO2 extinguishers can be identified by the
Black colour band on the body of the extinguisher.

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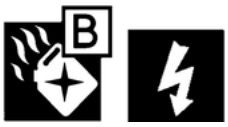
CLEAN AGENT

Clean Agent fire extinguishers are not new. They have been around for many years, previously in the form of Halon.



Halon fire extinguishers were very effective extinguishers. They were also very bad for the Ozone and Global Warming.

Modern Clean Agent fire extinguishers are now far more environmentally friendly, more so than CO2. Boasting Zero Ozone Depletion Potential (ODP) and <1 Global Warming Potential (GWP)

Much like CO2 these extinguishers are ideal for tackling electrically started fires in powered equipment.
Unlike CO2, these extinguishers do not pose the same risks of blood poisoning or asphyxiation.

Clean Agent extinguishers are a low-pressure extinguisher, just the same as powder, water, foam and wet chemical extinguishers.

Clean Agent extinguishers do not have a recognised Class A rating. Although they are effective at tackling combustible material in confined spaces.

Clean Agent extinguishers can be identified by the
Green band stating Clean Agent

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Symbol	Description	POWDER	WATER	WATER SPRAY	WATERMIST	FOAM	FOAM SPRAY	FOAM MIST	POWDER	WET CHEMICAL	CO2	CLEAN AGENT
A	CLASS A (e.g. wood, paper, cardboard, plastic)	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✗
B	CLASS B (e.g. solvents, paints, fuels)	✓	✗	✗	✗	✓	✓	✓	✗	✗	✓	✓
C	CLASS C (e.g butane, propane, LPG)	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
D	CLASS D (e.g. Potassium, Sodium, Magnesium)	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗
F	CLASS F (e..g. Cooking Oils and Fats)	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
⚡	Electrical (Passed EN3-7 Dielectric)	✓	✗	✓	✓	✗	✓	✓	✗	✓	✓	✓
Types of premises that might require this type of extinguisher		Outdoor locations Garages, Forecourts, Workshops	Schools, Shops, Hospitals, Offices, Warehouses	Schools, Shops, Hospitals, Offices, Warehouses	Schools, Shops, Hospitals, Offices, Warehouses	Fuel Stations, Garages, Workshops, Depots	Fuel Stations, Garages, Workshops, Depots	Fuel Stations, Garages, Workshops, Depots	Workshops, Foundries, Racetracks	Kitchens, Restaurants, Takeaways, Mobile Catering	Fuel Stations, Garages, Workshops, Depots	Schools, Shops, Hospitals, Offices, Warehouses

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So how does it all work?

A fire needs three things to survive. Oxygen, Heat and Fuel. Without a constant supply of all three elements a fire cannot survive.

All fire extinguishers work by removing one or more elements from the fire triangle.

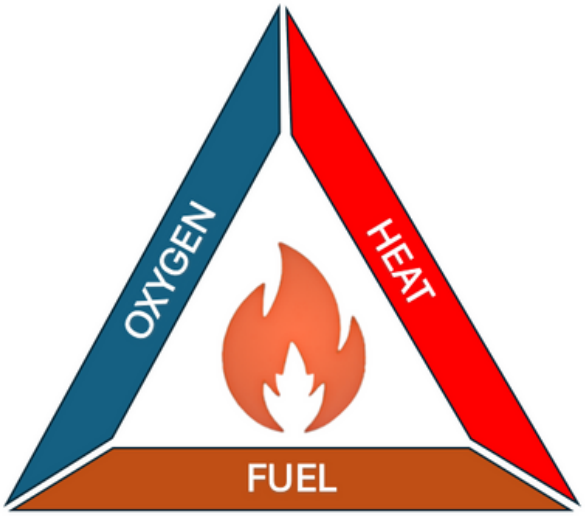
A **Powder** extinguisher acts as a layer between the fuel source and the oxygen cutting one off from the other.

A **Foam** or **Wet Chemical** extinguisher removes the heat and creates a smothering layer over the fuel rapidly cooling it down.

A **Water** in its simplest form rapidly cools the fuel and areas removing the heat.

CO2 suffocates the fire by removing the oxygen supply.

Clean Agent works in a similar way to CO2 by quickly absorbing heat and interrupting the chemical process that sustains the fire.



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How do I use one?

If you are unsure how to use an extinguisher, there are plenty of resources and training courses available to learn.

Knowing how to use an extinguisher is extremely useful as you never know when you might be in a situation where you need to. Knowing how to use one is just as important as owning one.

Fire extinguishers must be regularly serviced and inspected to ensure that when they are needed, they will work.

There are British Standards instructing and guiding on how and when they should be installed and maintained.

As a basic guideline remember P.A.S.S

PULL	AIM	SQUEEZE	SWEEP
			
Pull the safety pin	Aim the extinguisher nozzle at the base of the fire	Squeeze the operating lever	Sweep the nozzle from side to side across the fire

If you are not confident or able to use an extinguisher, do not attempt to try yourself.

Evacuate the premise and call 999 for the Fire Brigade.

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Can I buy extinguishers online?

Yes you can, there is nothing stopping you from sourcing your own portable fire extinguishers.

You must fully understand the risks that you are protecting and their associated fire extinguishers. Using the wrong one can make the situation far worse and endanger your life or others.

All professional fire extinguishers for business premises must be installed, commissioned and regularly serviced by a competant and trained professional.

Hawthorn Fire Protection can supply, commission, install and service all your fire extinguishers. We can even protect your equipment with automatic extinguishers should you not wish for your staff to use any.

We hope that you have found our guide useful, if you have any questions or would like to discuss your premises protection, please get in touch.

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Other services available

Commercial Kitchen Fire Suppression
Domestic Kitchen Fire Suppression
In Panel Automatic Fire Suppression
Micro Environment Fire Suppression
Sauna Fire Suppression
Manufactuing Equipment Fire Suppression
Vehicle Fire Suppression
Marine Vessel Fire Suppression
Automatic Fire Extinguishers

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