Types, Use & Colours of Portable Fire Extinguishers

Before you need to use a fire extinguisher read the label to make sure you fully understand the type of fire extinguisher it is. Also the type of fires it is appropriate and safe to use on.

Water and foam based extinguishers should not be used on fires involving an electrical hazard, unless the power supply has been isolated, this is because the operator may receive a fatal electric shock.

Before you can operate most extinguishers you are required to remove the safety pin, the only exceptions are hose reels, fire blankets and fire buckets. With hose reels you may have open a water valve before it can be used. Make sure before you tackle a fire you are between the fire and exit or escape route.

Water Spray Fire Extinguisher

Colour: Signal Red.

Best For: Fires involving organic solid materials such as wood, cloth, paper, plastics, Coal etc. Size for size, it offers up to 300% more fire fighting capability than traditional jet type water fire extinguishers.

Danger: Do not use on burning fat or oil or on electrical appliances.

How to Use: Point the jet at the base of the flames and keep it moving across the area of the fire. Ensure that all areas of the fire are out.

How it Works: Water has a great effect on cooling the fuel surfaces and thereby reducing the pyrolysis rate of the fuel. Instead of a jet nozzle a spray nozzle is used, with a higher pressure, which creates a fine spray. This allows for a given quantity of water to have a considerable increase in the surface area presented to the fire. This makes extinguishing more efficient by more rapid extraction of heat, formation of steam etc. They can also contain surfactants which help the water penetrate deep into the burning material which increase the effectiveness of the extinguisher.
Water Fire Extinguisher

Colour: Signal Red.

Best For: Fires involving organic solid materials such as wood, cloth, paper, plastics, Coal etc.

Danger: Do not use on burning fat or oil or on electrical appliances.

How to Use: Point the jet at the base of the flames and keep it moving across the area of the fire. Ensure that all areas of the fire are out.

How it Works: Water has a great effect on cooling the fuel surfaces and thereby reducing the pyrolysis rate of the fuel.

Water Mist Fire Extinguisher (Dry Water Mist)

Colour: Signal Red on white background.

Best For: The first broad spectrum extinguisher to tackle A rated risks as well as fats, deep fat fryers (Class F). Can also be safely used on electrical fires of up to 35000V.

Danger: Not suitable for gas fires.

How to Use: Point the jet at the base of the flames and keep it moving across the area of the fire. Ensure that all areas of the fire are out. The fire draws the microscopic water particles into the fire.

How it Works: Water is turned into microscopic particles in the supersonic nozzle. The water mist is drawn to the fire where it cools and suffocates the fire.

Dry Powder Fire Extinguisher (Multi-Purpose)

Colour: Blue.

Best For: Can be used on fires involving organic solids, liquids such as grease, fats, oil, paint, petrol, etc. but not on chip or fat pan fires.

Danger: Safe on live electrical equipment, although does not penetrate the spaces in equipment easily and the fire may re-ignite. This type of extinguisher does not cool the fire very well and care should be taken that the fire does not flare up again.

Smouldering material in deep seated fires such as upholstery or bedding can cause the fire to start up again. Do not use on domestic chip or fat pan fires.
How to Use: Point the jet or discharge horn at the base of the flames and, with a rapid sweeping motion, drive the fire towards the far edge until all the flames are out. If the extinguisher has a shut-off control wait until the air clears and if you can still see the flames, attack the fire again.

How it Works: Similarly to almost all extinguishing agents the powders acts as a thermal ballast making the flames too cool for the chemical reactions to continue. Some powders also provide a minor chemical inhibition, although this effect is relatively weak. These powders thus provide rapid knockdown of flame fronts, but may not keep the fire suppressed.

**Dry Powder Fire Extinguisher (Standard)**

**Colour:** Blue.

**Best For:** Liquids such as grease, fats, oil, paint, petrol etc. but not on domestic chip or fat pan fires.

**Danger:** Safe on live electrical equipment, although does not penetrate the spaces in equipment easily and the fire may re-ignite. This type of extinguisher does not cool the fire very well and care should be taken that the fire does not re-ignite. Do not use on domestic chip or fat pan fires.

How to Use: Point the jet or discharge horn at the base of the flames and, with a rapid sweeping motion, drive the fire towards the far edge until all the flames are out. If the extinguisher has a shut-off control wait until the air clears and if you can still see the flames, attack the fire again.

How it Works: Similarly to almost all extinguishing agents the powders acts as a thermal ballast making the flames too cool for the chemical reactions to continue. Some powders also provide a minor chemical inhibition, although this effect is relatively weak. These powders thus provide rapid knockdown of flame fronts, but may not keep the fire suppressed.
Dry Powder Fire Extinguisher (Special Powders)

Colour: Blue.

Best For: These specialist powder extinguishers are designed to tackle fires involving combustible metals such as lithium, magnesium, sodium or aluminium when in the form of swarf or powder.

There are three special powders based on graphite, copper and sodium chloride.

Danger: Do not allow water to come in contact with the burning metal and the powder must be gently applied. Sodium Chloride is not recommended for Lithium.

How to Use: The lance enables the user to tackle fire at a safe distance and the low velocity applicator to reduce the energy of the jet allowing the powder to gently smother the surface of the burning material thus avoiding scattering of high temperature particles and stimulating the formation of a crust. The method of application is completely different from a standard extinguisher and user training is required. They are not suitable for use on live electrical fires.

How it Works: This extinguisher works by forming a crust which insulates the metal to prevent access to other combustible material nearby and smothering the fire to prevent oxygen from the atmosphere reacting with the metal.

Foam Fire Extinguisher (AFFF)


Best For: Fires involving solids. Liquids such as grease, fats, oil, paint, petrol, etc. but not on domestic chip or fat pan fires. Can also be used on class A fires.

Danger: Do not use on domestic chip or fat pan fires.

How to Use: For fires involving solids, point the jet at the base of the flames and keep it moving across the area of the fire. Ensure that all areas of the fire are out. For fire involving liquids, do not aim the jet straight into the liquid. Where the liquid on fire is in a container, point the jet at the inside edge of the container or on a nearby surface above the burning liquid. Allow the foam to build up and flow across the liquid.
How it Works: They are mainly water based, with a foaming agent so that the foam can float on top of the burning liquid and break the interaction between the flames and the fuel surface.

**Foam Fire Extinguisher (Standard)**

- **Colour:** Cream.
- **Best For:** Fires involving solids. Liquids such as grease, fats, oil, paint, petrol, etc. but not on domestic chip or fat pan fires. Can also be used on class A fires. Less effective than AFFF foam.
- **Danger:** Check manufacturer’s instructions for suitability of use on other fires involving liquids. These extinguishers are generally not recommended for home use.
- **How to Use:** Do not aim jet straight into the liquid. Where the liquid on fire is in a container, point the jet at the inside edge of the container or on a nearby surface above the burning liquid. Allow the foam to build up and flow across the liquid.

How it Works: These are mainly water based, with a foaming agent so that the foam can float on top of the burning liquid and break the interaction between the flames and the fuel surface.

**Carbon Dioxide Fire Extinguisher**

- **Colour:** Black.
- **Best For:** Live electrical equipment when it is not possible to isolate the electric supply and flammable liquids such as grease, fats, oil paint, petrol etc. but not on domestic chip or fat pan fires.
- **Danger:** Do not use on domestic chip or fat pan fires. This type of extinguisher does not cool the fire very well and you need to watch that the fire does not start up again. Fumes from CO2 extinguishers can be harmful if used in confined spaces: ventilate the area as soon as the fire has been controlled.
- **How to Use:** The discharge horn should be directed at the base of the flames and the jet kept moving across the area of the fire.
How it Works: Carbon dioxide extinguisher works on classes B and C and works by suffocating the fire. Carbon dioxide will not burn and displaces air.

**Wet Chemical Fire Extinguisher**

**Colour:** Canary Yellow.

**Best For:** The specialist wet chemical extinguishers are ideal for Class F fires, involving cooking oils and fats, such as lard, olive oil, sunflower oil, maize oil and butter.

**Danger:** Check manufacturer's instructions for suitability of use. These extinguishers are not recommended for class B fires and home use.

**How to Use:** Apply the wet chemical using the extended applicator in slow circular movements, which give a gentle, yet highly effective application. Apply the fine spray onto the burning fat until the surface of the burning cooking oil changes into a soapy like substance, this then prevents re-ignition. The gentle application helps prevent hot oil splashing onto the user.

How it Works: Most class F extinguishers contain a solution of potassium acetate, sometimes with some potassium citrate or potassium bicarbonate. The extinguishers spray the agent out as a fine mist. The mist acts to cool the flame front, while the potassium salts saponify the surface of the burning cooking oil, producing a layer of foam over the surface. This solution thus provides a similar blanketing effect to a foam extinguisher, but with a greater cooling effect. The saponification only works on animal fats and vegetable oils, so class F extinguishers cannot be used for class B fires. The misting also helps to prevent splashing the blazing oil. Tests have established that a 6 litre extinguisher is capable of extinguishing a fire in a 75 litre capacity deep fat fryer. The extinguisher is easy to use producing a gentle but highly effective spray.
**Fire Blanket**

Fire Blanket Fire blankets are made of fire resistant materials. They are particularly useful for smothering flammable liquid fires or for wrapping round a person whose clothing is on fire. Fire blankets conforming to British Standard BS EN 1869: 1997 are suitable for use in the home BS 7944: 1999 is suitable for industrial use. These will be marked to show whether they should be thrown away after use or used again after cleaning in accordance with the manufacturer’s instructions.

- **Best For:** Fires involving both solids and liquids. Particularly good for small fires in clothing and for domestic or commercial chip and fat pan fires provided the blanket completely covers the fire.
- **Danger:** If the blanket does not completely cover the fire, it will not be able to extinguish the fire.
- **How to Use:** Place carefully over the fire. Keep your hands shielded from the fire. Do not waft the fire towards you.
- **How it Works:** Smothers the fire, prevent oxygen getting to the fire.

**Fire Hose Reel**

- **Best For:** Fires involving organic solid materials such as wood, cloth, paper, plastics, coal etc.
- **Danger:** Do not use on burning fat or oil or on electrical appliances before the electric supply has been isolated.
- **How to Use:** Point the jet at the base of the flames and keep it moving across the area of the fire. Ensure that all areas of the fire are out.
- **How it Works:** Water has a great effect on cooling the fuel surfaces and thereby reducing the pyrolysis rate of the fuel.
Fire Buckets

A simple bucket of water can be used on Class A type of fires either to supplement a water extinguisher or as a first attack if an extinguisher is not immediately available. It also can be filled with dry sand and used as an absorbing agent or to dam a flow of flammable liquid. They do have serious disadvantages as they are often misused, left empty, or allowed to be used as a refuse container.

Best For: Wood, Cloth, Paper, Plastics, Coal etc. Fires involving solids.

Danger: Do not use on burning fat or oil or on electrical appliances before the electric supply has been isolated.

How to Use: Throw at the base of the flames and keep it moving across the area of the fire. Ensure that all areas of the fire are out.

How it Works: Water has a great effect on cooling the fuel surfaces and thereby reducing the pyrolysis rate of the fuel.