

## Fire Extinguisher Guide

Fire Extinguishers are there only to fight small fires; even then fires should be tackled only in their early stages and for as long as they do not block your exit.

70% of Fire related deaths are due to being overcome by smoke and fumes so if the fire begins to spread or is beginning to fill the room with smoke – get out and close the doors behind you.

Portable Fire Fighting Equipment (PFE) comes generally in two forms: Fire Extinguishers and Fire Blankets. Fire Extinguishers are categorised by the type of fire they are designed to fight and come in various sizes and types.

You need to consider how many and the types that you need, where they should be placed, and how you plan to check/inspect and service/maintain them.

For in-depth information and advice you should consult BS 5306 ([www.bsigroup.com](http://www.bsigroup.com)) or a professional FETA registered maintenance technician.

## Different Fire Extinguishers for different fires

You've got to choose the right fire extinguisher for the job. Certain types fight certain classes of fire – using the wrong one on a fire can cause the fire to spread or put you in danger. This is produced as a guide, always check manufacturer's recommendations for use and suitability.

### Fire Classes

TYPE	WATER	AFFF FOAM	ABC POWDER	CO <sub>2</sub>	WET
<b>Class A – Organic Solids</b> Such as wood, plastics and paper 	YES	YES	YES		YES
<b>Class B – Flammable Liquids</b> Such as petroleum. Not alcohol or cooking oil 		YES	YES	YES	
<b>Class C – Flammable Gases</b> Such as propane and butane 			YES		
<b>Class F – Fats / Cooking Oils</b> Such as sunflower / olive oil and butter 					YES
<b>Electrical</b> Such as any live electrical appliance or wiring 			YES	YES	

## **Water Extinguishers**

Water extinguishes a fire predominantly by cooling it, but it's dangerous to use water on fires other than Class A. Use it on a Class B and you'll spread the fire, release hydrogen from Class D (which will probably explode), conduct electricity on live electrical fires, and we've all seen what happens when you add water to a fat fire.

Increasingly, water extinguishers contain additives, which may make them suitable for other types of fire and increases their rating so they are able to extinguish larger fires. There are drawbacks however:

- It may tie you to using one company to maintain the extinguisher if you want the same additive (Chubb Hydrospray)
- They're generally more expensive to refill.
- If you're buying them on the basis they can fight larger fires, consider whether this is wise. Extinguishers are there to fight small fires, not big ones.

## **Foam Extinguishers**

They contain protein or detergent based compounds added to water that produce a film or froth that floats on Class B fires forming a seal that smothers it.

Foam comes in two varieties 'Foam' and 'AFFF (Aqueous Film-Forming Foam)'. Ordinary Foam is used for a limited number of liquid fires, but AFFF can be used on a wider range. Use neither on chip pan fires.

## **Dry Powder**

Dry powder comes in three types, BC, ABC and D (Class D fires are metal fires). Powders are almost multi-purpose and will extinguish a fire quickly.

They have little in the way of a cooling effect, so unless they're able to cover / smother the fire completely it may re-ignite. Electrical equipment is difficult to tackle because the power cannot reach the component/cause of the fire. They are very messy and can obscure vision.

## **Carbon Dioxide**

Carbon Dioxide displaces oxygen to smother a fire, and because it's a gas stored under pressure as a liquid it has a cooling effect. Never hold the horn when operating a CO2 extinguisher.

They're particularly effective on electrical fires because they can penetrate enclosures easily. As a gas it leaves no residue and causes less damage compared to other extinguisher types.

## **Wet Chemical**

Only attack a chip pan fire with a Wet Chemical Extinguisher (or cover it with a fire blanket). Class F extinguishers reacts with the burning fat to saponify it and turn the surface in to a crust, sealing it from the air and allowing it to cool.

## **Fire Blankets**

Although not an extinguisher, it's still classed as portable fire fighting equipment. Fire blankets are predominantly only used in kitchens. They work by smothering the flames. If you have a deep fat fryer over 3 litres you should also have Wet Chemical extinguishing equipment.

## Know how to use a Fire Extinguisher

It's all very well installing all the Extinguishers, but do you and/or your staff know how to use them? All too often training is forgotten. Although simple to use correctly, incorrect use can prove fatal.

1. Make sure you know what's burning and select the correct type of extinguisher for the fire.
2. Only fight a fire in its early stages. Extinguishers can be used only to fight or contain small fires.
3. Before you begin, make sure you start with your back towards the exit. Start several feet away and plan to get closer as the fire diminishes, remember some extinguishers run only for 10 seconds.
4. Pull The Pin out and aim the nozzle at the base of the fire, in the case of Carbon Dioxide do NOT hold the horn.
5. Squeeze the handle and sweep from side to side at the base of the fire until it appears to be out. Keep an eye on it to ensure it doesn't re-ignite.
6. If at any point the room fills with smoke, or the fire blocks your exit, get out.

Most extinguishers work in this way, but some don't. Spend a few minutes familiarising yourself with the types you have on site and how they operate.

### Do not attempt to fight a fire if:

- it blocks your exit;
- it begins to spread;
- if the type of extinguisher is wrong;
- if the extinguisher is incorrectly rated / too small;
- if you're unsure how to use it.

## Know where, how and when to install Fire Extinguishers

It's obviously essential that:

- You site extinguishers where they'll be most useful; and that
- You have enough of the right type of extinguishers.

The following is based on typical risk.

### Provision for Class A Risks:

- One 13A rated extinguisher (typically a 9 litre water) for every 200 sq. metres of floor space
- A minimum of 2 extinguishers on each floor with a combined rating of at least 26A
- If the building is single occupancy (one company) on upper floors the minimum rating is reduced to 13A for floor spaces of less than 100m<sup>2</sup>.
- Maximum of 30m travelling distance from fire to an extinguisher

### Provision for Class B Risks:

- Each room / area / enclosure to be considered separately for risk (i.e. if a Class B risk exists at least one extinguisher must be present in that area)
- In larger areas, risks more than 20m apart to be considered separately (i.e. minimum of one extinguisher per risk)
- Risks within 20m of each other need to be considered as individual groups or divided groups (take professional advice!)

There is no definitive legal requirement for the quantity of extinguishers. Be confident in your own judgement, or take some professional advice. All classes of risks need to be considered separately, and the extinguishers should ideally be adjacent to, and powerful enough to fight, the potential fire risk.

All extinguishers should be:

- Sited on escape routes
- A maximum of 30m from the fire hazard
- Near the door
- Capable of being operated by the building occupants (e.g. not too heavy for the elderly)
- Similar in operation type
- In similar locations on all floors (if your building is multi-storey) forming 'fire points'
- Ideally the handle 1m above floor level, or 1.5m for smaller units
- Correctly labelled (signage above the extinguisher)
- Easily seen and accessible

For larger or more complex premises take professional advice, or refer to BS 5306 part 8 (<http://www.bsigroup.com/en/Shop/Publication-Detail/?pid=00000000030001662>).

## Where to buy and how to service your Fire Fighting Equipment

The Regulatory Reform (Fire Safety) Order 2005 requires you to log and record all inspections, servicing and staff training in your fire log books.

Servicing is essential. It's more dangerous to have an extinguisher that doesn't work than not to have one in the first place. Out of date or used equipment creates a false sense of security, someone could risk their life trying to fight a fire with faulty or inefficient equipment unless it's well serviced.

Whatever you do, make sure the equipment you buy is stamped with the BS EN 3 kitemark. Your secondary consideration is where to source equipment from and who you plan to use to maintain it.

The logical place to buy from is the company you choose to carry out the maintenance – but compare their prices to mail order suppliers on the internet. The big names (we won't mention them here) tend to be expensive compared to your more local independent maintenance companies who may well provide you with a better level of service anyway.

Legislation (BS 5306-3) puts the onus on the user (i.e. the company) to use a Competent Person to maintain the equipment. You must also follow the manufacturer's servicing requirements.

Most maintenance engineers earn the majority of their pay in commission so make sure you understand the legislation rather than solely taking their advice.

Fire Extinguishers need regular checks (which you could and should do yourself) and they need an annual service, a 5 yearly discharge (or DTR) on all but Carbon Dioxide. Ideally look to replace your extinguishers every 10 years.

## Choosing a Maintenance Company

There are plenty of companies that will take advantage of your lack of knowledge. Broadly they'll fall in to 3 categories:

### **The Cowboys:**

Their service tools are a pen and a duster. Unfortunately there's no specific qualification requirement for engineers and a lot of these people have no formal training, let alone a recent refresher course.

### **The Commission Earners:**

Probably most complaints come from these kind of companies. It's understandable that many engineers are on some form of commission, but this can go too far if there are tough targets for them to reach. A fire engineer should give you advice, but not try and close sales down on the spot.

### **The Genuine Service Company:**

They're interested in your long term and repeat business. They do what's required to a high standard, and don't try and sell product or servicing that's not required.

Make sure that whoever you chose is BAFE approved (the engineer will carry an ID badge certifying this).  
When the engineer arrives:

- Make it clear that no work is to be done without agreeing a cost first
- Ask to see and have faults explained before the work is carried out
- Tell them that discharges are to be done at the required time, and not earlier to "spread the cost"
- Ask if the staff can do the discharges as part of their training
- If an item needs overhauling, discharging etc, check that the cost of this is no more than you could buy a new unit for.

## Maintenance and Inspections

### **Regular Visual Inspection**

Ideally this should be completed weekly, but the legislation states at least monthly. If you've only small premises there's no need to record the information as long as in your own mind you know the check has been completed; if you're going to delegate this responsibility make sure they keep a written record with the date, the equipment inspected and the checks performed.

Check the equipment is in the proper position, that it has not lost pressure or been discharged, that the tags and pins are still in place, and do a visual inspection of the unit paying special attention to the hose or horn.

Keep at least one spare Fire Extinguisher of each type along with replacement Tags and Pins. Tags can be easily pulled off, but Pins should stay in place. Once a Pin has been pulled out it will not remain secure and will need replacing. Obviously if the Extinguisher has been discharged or lost pressure it will need servicing and/or recharging before being put back in to use.



### **Annual Service**

This needs to be carried out by a Competent Person, someone FETA registered that's completed a refresher course within the last 3 years.

### **5-Yearly Extended Service**

As with a basic annual service but with a full discharge and internal examination of stored pressure extinguishers. CO2 extinguishers also need a ten-year detailed inspection and hydraulic pressure test to meet Pressure Systems Safety Regulations 2000.

**Total Fire Safety don't sell these products but have years of experience specifying and designing fire safety systems. We are happy to offer impartial advice and, if needed, point you in the right direction of a genuine service provider.**

**Ready to take the Total Fire Safety approach for your organisation?**

**Call us today on 0330 660 0460 for a free consultation**