



# ALL YOU HAVE EVER WANTED TO KNOW ABOUT FIRE EXTINGUISHERS

## Does my workplace need fire extinguishers?



Government guide lines suggest that even a one room shop should have a least one extinguisher. So the answer is - Yes, your business does need fire extinguishers. It is a legal requirement for every UK business to carry out a fire risk assessment and this should determine your needs in regards to; how many and what type are required for your specific workplace.



## What type of extinguishers do I need?

As stated above, this depends on the type of business you undertake, but firstly let's consider which types are available:

### Class A

Water is suitable for 'Class A' fires i.e. solids, e.g. wood, paper, plastic, upholstery etc. It works by cooling and removing heat.



### Class A, B

Foam fights 'Class A & B' fires so that's - solids, e.g. wood, paper, plastic, upholstery etc. as before PLUS flammable liquids.

On Class A fires it works by cooling and removing heat on Class B fires it works by forming a film over the surface of the liquid and excluding oxygen.

### Electrical & Class B

Carbon Dioxide or 'Co<sup>2</sup>' fights electrical fires and flammable liquids. You may wonder why it isn't classified Class E perhaps but essentially there is no such

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thing as an electrical fire. That is to say all other classifications (A, B, C, D & F) are types of fuel that burn whereas electrical is a source of ignition. It is an asphyxiant and removes oxygen effectively smothering the fire. One of its main advantages is the complete lack of mess after use.

Class A, F

Wet Chemical is specifically designed to fight fires involving cooking oil and fat and employs a method called saponification (turning to soap). It can also have a cooling effect and could be used to fight Class A' fires - solids, e.g. wood, paper, plastic, upholstery etc.



Class A, B, C & electrical

Dry Powder is a multi-class extinguisher and is often specified due to its multiple class capability. It will fight: solids, flammable liquids, flammable gasses and electrical fires.

It is a very fast acting extinguisher and its speed of knock-down combined with its versatility makes it a very popular choice.

There are however certain drawbacks to consider: It has little or no cooling-effect so re-ignition can be a danger but its biggest drawback is the mess it leaves behind.

## How do I decide which ones I need?

British Standards 5306 gives us guidelines as to which extinguishers to use where and on what type of fire but still leaves you with a choice.

In terms of cost, the powder extinguisher seems like a one size fits all solution. However, as a business owner, you may consider business continuation and the effect upon normal operations after using the extremely messy dry powder extinguisher. If your business involves: catering, clothing, decorations, electronics etc. then maybe you should consider the effect of the discharged powder continually settling for days on end. Co<sup>2</sup> is much better at penetrating the casing of electrical devices (pc's, TV's etc.) to get to a fire internal to a casing.

So, let's look at a few examples;

- For larger premises such as a car dealership with a showroom, office, workshop, store and flammable storage, you should consider each area separately. The office, showroom and store probably have similar needs whereas the workshop and flammable areas are very different.



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However, it is best not to have too many different types in the same premises, this may create confusion. If you have foam in the workshop use foam in the office area as well.

- A commercial kitchen should have a combination of fire blankets, Wet Chemical extinguishers for any deep fat fryers, plus Co<sup>2</sup> for electrical fires.
- An office presents the same risks as most shops, hotels, residential homes, etc so the requirements would be a water or foam extinguisher with a Co<sup>2</sup> at each fire point.
- Construction sites would have multiple risks so powder and Co<sup>2</sup> would be a good option.

And don't forget your company transport - every vehicle should have a 2 kg dry powder extinguisher. Larger vehicles carrying dangerous goods require additional extinguisher provision.

Another consideration is the temperature. If they are stored outside then dry powder would be best as it can be used down to minus 30 degrees. Foam and water would need antifreeze but this reduces the fire-fighting ability.

## But how many will I require?

The number and type of fire extinguishers you require is not always easy to gauge and depends on the nature of your business and the risks involved. The best way to evaluate these is to undertake a Fire Risk Assessment which forms part of your legal obligation as a business owner.

As a general rule, each floor will need one water-based extinguisher such as water, water additive or foam (3 litre or bigger) for every 200 square metres of floor space.



The correct number of water extinguishers to tackle Class A fires (fires involving combustible solids such as paper, wood, cloth, plastics etc) can be determined by finding the fire rating of the floor area.

The extinguisher must have its fire rating displayed on it. This will be found near the top of the label on any approved extinguisher and is usually 13A, 21A or 34A depending on its size and in some occasions chemical additives.

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The fire rating required is found by multiplying the floor area in metres squared (m<sup>2</sup>) by 0.065. Therefore for a floor area of 200m<sup>2</sup> the fire rating is 200 x 0.065 = 13A., i.e. 1 x 13A rated water or foam extinguisher.

Other factors to take into account are that a person should not have to:

- Travel more than 25 metres to get to a fire extinguisher
- Go through more than two doors to get to an extinguisher
- Go to a different floor level to find an extinguisher

For special risks such as fires involving live electrical equipment, a suitable extinguisher should be provided, carbon dioxide or dry powder, near to the risk or at least within a reasonable distance (less than 30m) usually placed next to the water extinguishers required.

## Where should I site them?

The positioning of your fire extinguishers is very important as every second counts in an emergency. Remember, the person trying to find them may not be familiar with your premises.

For most buildings, the best place to site your extinguishers is by the main entrance as this would also be the main exit which makes it an obvious place to find firefighting equipment.

Don't hide them behind screens, doors or displays. If they can't be found they are next to useless.

Other places to locate them are at fire exit doors and top and/or bottom of stairs. In essence, they should be on fire exit routes whilst not obstructing the route itself.

In addition to the main fire points you may have specific risks such as a kitchen, a server room, a mains electrical intake, or a machine.

In these cases, the extinguisher or fire blanket needs to be near to the risk but not so close that it could not be grabbed in a fire situation. These also need to be in a very visible position and not hidden in cupboards or behind other things.



## How should they be stored?

Ideally, all extinguishers should be fixed in a permanent position. Those with contents of 3 kg or 3 litres plus should be wall-mounted so that the handles are one metre from the floor.

1 and 2 kg extinguishers need to be mounted so that handles are a minimum of one and a half metres from the floor level.

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However, as many of modern shops and offices have partition walls or expanses of glass, this may not be always practical. In such case, a fire extinguisher stand would be suitable.



Fire extinguisher stands tend to come in single or double sizes and in many different colours!. Some will be made from GRP (fiberglass) but these can crack and are not suitable for food preparation areas. There are also vacuum formed plastic stands at the "economy" end but they must be leaned against a wall as there is no back to them. If aesthetics are important, chrome-plated tubular steel or stainless steel versions are available.

Most new extinguishers from reputable manufacturers will be supplied with a suitable wall mounting bracket in the box. 3 litre or 3kg and above need a j-bracket (a hook that looks like a J shape when viewed from the side). The back of the extinguisher will have a bracket holder welded onto the body and all UK models are the same fitting.

CO2 extinguishers will have a lug bracket which will be a different size for a 2kg or a 5kg size. This locates in a little hole on the back side of the brass valve by the handles.

If you transport the extinguishers, you may need a transport bracket with straps for extra support. Most 1kg and 2kg powders will come with a wire clip bracket suitable for transport.

## What about training my staff to use them?

The guides provide by Government to help us understand the expectations of the Regulatory Reform (Fire Safety) Order 2005 explains the requirement for fire safety training. It explains that, where relevant, you should train staff in the appropriate use of fire fighting equipment.

Your Emergency plan should set out who amongst your staff will be expected to use them and therefore trained. This could be all of your staff, staff in key roles or a few selected fire wardens.

It is good practice to record any training provided in your fire logbook.



## Do my extinguishers need inspection and servicing?

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Yes, extinguishers should be checked periodically by the owners, and serviced annually ('Basic Service') by a competent engineer.

BS 5306 suggests an inspection and maintenance routine which includes;

- Weekly check by the responsible person.
- Visual inspection by the responsible person conducted at least monthly.
- Basic service by Competent Person, conducted at least on an annual basis ( $\pm$  1 month).
- Extended service & overhauls, are carried out after the first 5 years, and then at 5 yearly intervals thereafter. The exception being CO<sub>2</sub> extinguishers which require a Hydraulic Stretch Test every 10 years.



## Do all extinguishers have to be red?

Technically, yes. The current British and European standards require all fire extinguishers to be red in colour. The previous standard had individual types of extinguisher coloured according to type (e.g. blue-powder, cream-foam, and black-CO<sub>2</sub>).



The current standard retains these colour classifications but only as a band of colour which must be no more than 5% of the height of the extinguisher body.

That said, you will see many workplaces using chrome extinguishers for aspheric purposes. The enforcement agencies may or may not tolerate these

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## So, are the old type extinguishers Illegal?

This is where the, seemingly, common advice often falls a little short. A brief sweep of the internet will bring you masses of quotations advocating that – *You shouldn't be conned by commission happy engineers telling you 'they're not legal'*.

Or alternatively –

*'The old blue, cream and black extinguishers are now illegal and you must exchange them as soon as possible for new red ones, or face prosecution by the Fire Authority.'*

Confused? The fact is, provided they are satisfactorily maintained and under 20 years old, provided you do not have a mixture, i.e. some old coloured ones mixed with the new all red, then they are legal. In truth, BS 5423: 1987 was withdrawn in 1997 so they are probably getting towards the end of their useful life anyway and generally and it is more cost effective to replace them when they reach their extended service date.



## How often should I replace them?

BS 5306 states that extinguishers should be replaced by no later than at the age of 20 years.



We hope you found this guide useful and for help and guidance, please call us on 0845 519 9039 or email: [info@unicornsafety.co](mailto:info@unicornsafety.co).