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Fire extinguishers on construction sites

Fire safety:







Does your
site have
the correct
firefighting
equipment?



Introduction

The fire extinguisher is often misunderstood and underrated in terms of its purpose and performance. It is common to hear people say: “I tell my staff not to use a fire extinguisher – just get out of the building” and “fire extinguishers are only for use if your exit is blocked” etc. This is because people think of an inferno when they hear the word 'fire'. If this was the reality of every fire then a fire extinguisher would admittedly be futile. However, 80% of fires in the UK are put out using fire extinguishers. No one shouts about this success because “they were only little fires”. Those fires were the sort of size that many of us would tackle even if we didn’t have a fire extinguisher. The fire extinguisher enables us to confront such fires safely, and this active firefighting measure helps prevent an inferno. By being in the right place and ready for use, the fire extinguisher has the admirable record of preventing those newspaper headlines that actually we don’t want to see.

“The fire extinguisher enables us to confront fires safely.”

Table A						
	 Class A	 Class B	 Class C	 Class D	 Class F	 Electrical risks
	Flammable solids – wood, paper etc.	Flammable liquids – petrol, oil, paint etc.	Flammable gases – butane, propane etc.	Flammable metals – aluminium, magnesium etc.	Cooking oils and fats	Live electrical equipment
Water	○	×	×	×	×	×
Foam	○	○	×	×	×	×
Powder	○	○	○	×	×	○
CO ₂	×	○	×	×	×	○
Wet chemical	○	○	×	×	○	×
Specialist powder	×	○	×	○	×	○

→ Guidance documents

The primary guidance for fire extinguisher selection and positioning is contained in the British Standard BS 5306-8. Additionally, advice specific to construction sites is contained in the HSE publication Fire Safety on Construction Sites (HSG168) and the Joint Code of Practice on the Protection from Fire of Construction Sites and Buildings Undergoing Renovation (commonly known as JCOP).

→ Selecting your fire extinguishers

There are different extinguishers available, and Table A (pg. 2) summarises the classes of fire that each extinguisher can tackle.

To assist in the selection of the right types, we have listed a few advantages and disadvantages of each extinguisher type.

Advantages		Disadvantages
Water	<ul style="list-style-type: none">• Clean• Inexpensive to refill	<ul style="list-style-type: none">• Single-class extinguisher• Heavier than foam
Foam	<ul style="list-style-type: none">• Multi-class• Excellent on contained flammable liquid fires• Light weight compared with water	<ul style="list-style-type: none">• Some residue/environmental issues if discharged• Not effective on running fuel fires
Powder	<ul style="list-style-type: none">• Effective on all common classes of fire• Effective on running fuel fires• The most effective extinguisher for its weight	<ul style="list-style-type: none">• Very messy• Not recommended indoors because it can obscure the exit route• Asphyxiating• Highly damaging to electrical equipment
CO ₂	<ul style="list-style-type: none">• Clean gas – minimising damage to equipment and surroundings• Lightweight	<ul style="list-style-type: none">• Asphyxiating in very confined space• High-pressure cylinder
Wet chemical	<ul style="list-style-type: none">• Extremely effective on oil and fat fires• Also suitable for Class A risks	<ul style="list-style-type: none">• Expensive to refill

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→ Installation, positioning and protection

Fire extinguishers must be visible and readily accessible at all times. In most buildings, extinguishers are wall-mounted, ensuring that they remain in the right place; this is often difficult to achieve on a construction site. However, the likelihood of the extinguishers ‘wandering’ if they are not properly mounted is even higher than in a normal building. There are several options available:

- 1) Plastic stands
- 2) Mobile fire points
- 3) Cabinets

You should also consider the need to protect the extinguishers from damage and the elements. Water-based extinguishers can freeze in cold weather, and you may require anti-freeze additives. Cabinets can provide some protection.

→ How many and where?

The checklist overleaf is designed to help you implement the right extinguishers in the right place. All main extinguishers should be sited prominently on exit routes so that people can find the extinguishers as they exit the building.

“The right
extinguisher
in the right
place.”

Building under construction	Yes	No	N/A
Do you have 1 x 9 L water or 6 L foam extinguisher and 1 x 2 kg CO ₂ for every 200 m ² of floor area?			
Do you have 2 x 9 L water or 6 L foam extinguishers for every floor of the building?			
Can you reach an extinguisher within 30 m of any point in the building?			
Do you have a CO ₂ extinguisher within 10 m of any significant electrical hazard?			
Site accommodation	Yes	No	N/A
Do you have 1 x 9 L water or 6 L foam extinguisher and 1 x 2 kg CO ₂ for every 200 m ² of floor area?			
Can you reach an extinguisher within 30 m of any point in the building?			
Do you have a CO ₂ extinguisher within 10 m of any significant electrical risk?			
Do you have a wet chemical extinguisher if you are using cooking oils and fats?			
Do you have a fire blanket in the canteen?			
Special risks	Yes	No	N/A
Do you have a powder extinguisher adjacent to (but not in) the LPG gas cage?			
Do you have a powder extinguisher near LPG risks on site?			
Does all ride-on plant have a suitable extinguisher on the vehicle?			
Are suitable extinguishers provided near hot works?			
Are there suitable foam and/or powder extinguishers near any fuel tanks or other fuel storage?			
Spares	Yes	No	N/A
Do you have a reasonable proportion of spare extinguishers in case an extinguisher is used?			
Extinguisher placement and maintenance	Yes	No	N/A
Are all extinguishers suitably mounted and protected?			
Are all extinguishers within date with service label/tag in place?			
Are you reviewing the provision of extinguishers as the work progresses?			

This list is not exhaustive, and professional advice should be sought if you are unsure what extinguishers are required.



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