



Main changes in BS 5306-8 2023 - Fire extinguishing installations and equipment on premises - Selection and positioning of portable fire extinguishers. Code of practice

Advantages & disadvantages of extinguishing media

Clause 5.4.3 has been removed from the previous version (BS 5306-8:2012) that emphasised the disadvantages of powder when used indoors. The commentary on the use of Dry Powder extinguishers indoors now says

Powder can reduce visibility in the immediate vicinity of discharge and might impair breathing, either of which could hinder escape.

There is expanded balanced commentary in clause 4 on different extinguishing media - their firefighting properties; the effects of each on people, property, and the environment. Highlighting that all extinguishing media have advantages and disadvantages

Powder extinguishers

- Powder can reduce visibility in the immediate vicinity of discharge and might impair breathing, either of which could hinder escape.
- ABC and BC powders are electrically non-conductive.
- Class D powders can be electrically conductive.
- When discharged on to equipment, powder clings to decorated surfaces, metals, glass, ceramics, grease-films, etc.
- Equipment and spaces contaminated with powder need to be cleaned as soon as possible.
- Powder, when moistened, can be corrosive.
- Powder also hangs suspended in still air for some time, and contaminated areas could require cleaning more than once.
- Some class D powders are graphite-based.
- Graphite-based powders are black/dark grey in colour and can stain heavily.
- Floor surfaces become very slippery where this is used.
- Discharged powder needs to be contained, collected (often by vacuum cleaner) and disposed of safely, in an environmentally acceptable manner.

Carbon dioxide (CO₂) extinguishers

- CO₂ is electrically non-conductive.
- Its discharge is louder than that of other extinguishers.
- It does not leave any residual deposits that require cleaning up after extinction and is not usually subject to environmental controls.
- CO₂ can be hazardous to persons in enclosed rooms of small volume with restricted ventilation.

Water extinguishers

- Water is not normally a danger to respiration unless it is discharged directly into the face, contains bacteria, and/or is inhaled in aerosol form.
- Water conducts electricity. The use of purified water (i.e. distilled, deionised or de-mineralised) on a fire introduces CO₂ from the air, impurities from the products of combustion, and an increase in temperature. This causes the water to reassume its natural properties, and as a result can render the originally purified water electrically conductive.
- Water can be corrosive, particularly to iron and steel, and can cause damage to paper, cardboard and materials with soluble dyes running out.
- Water can also cause damage by short-circuiting live electrical equipment.

Water based extinguishers such as water with additive, foam, alcohol-resistant foam and wet chemical.

- The commonly added chemicals can irritate skin.
- They are unlikely to be a danger to respiration.
- Water-based media conduct electricity in the same way as water does.
- Most water-based media can cause corrosion, even if only by removing the grease layer from metal.
- Some solutions are corrosive to other materials.
- Equipment wetted in the course of firefighting might need to be cleaned afterwards, particularly if its subsequent corrosion is likely to affect its life or operation.
- Water-based media cannot be discharged to groundwater or surface drains.
- Some water-based media [e.g., those containing per- and polyfluoroalkyl substances (PFAS)] are subject to environmental and health considerations and need to be contained, collected and incinerated.
- The hot fat/oil extinguished by a wet chemical extinguisher has to be allowed to cool thoroughly before clean-up.

Arrangements for extinguishers

- The standard now states that the responsible person and installer/service provider should share information so that a suitable specification can be prepared.
- This helps to emphasise that extinguishers form part of the whole concept of fire protection and should not be assessed in isolation from the overall design of provision pre-installation.
- Additionally, 4.5 says that fire hazards external to a building should be assessed to determine the correct fire extinguisher cover
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Electrical conductivity and extinguisher use - Clarification

- Clause 7.7 says that, for safety reasons, only electrically non-conductive extinguishing media such as non-conductive powder, carbon dioxide, or other clean agent, should be specified for use on live electrical equipment because water (including distilled, deionised or de-mineralised) and water-based media may conduct electricity when used on a fire.
- Warnings added regarding the electrocution risk from using electrically conductive extinguishing media on live electrical equipment.

WARNING. Before any extinguisher is discharged onto live electrical equipment, it is expected that the equipment will be disconnected/isolated. Even where cut-off protection is provided, a fire can cause this to fail, and therefore the use of electrically conductive extinguishing media could result in electrocution. The electrical supply to consumer units/fuse boards will always remain live, except where there is a complete failure of the supply.

- The old note 2 in clause 9.2 concerning any manufacturers' markings re suitability for use on live electrical equipment has been removed as a result.
- Mains intake/distribution, cooking appliances and live electrical equipment identified by assessment, require a dedicated non-conductive extinguishing media fire extinguisher with a travel distance of not more than 10m;
- Common electrical hazards such as lighting and small appliances do not require a dedicated fire extinguisher and are to be covered by non-conductive extinguishing media fire extinguishers throughout the premises with a travel distance of not more than 30m.

Fire hazard from 2 types of batteries

Lithium-ion batteries in individual small rechargeable devices

- Clarification that rechargeable lithium-ion batteries are not a class D fire hazard.
 - Disposable primary lithium metal batteries contain flammable metallic lithium and are therefore class D hazards.
 - Rechargeable lithium-ion batteries contain lithium salts, not metallic lithium. As such they are not Class D hazards
- For lithium-ion batteries, water or water-based extinguishers should be provided to cool individual small rechargeable devices that are no longer on charge.
- These water or water-based extinguishers are normally part of the existing coverage rather than a specialist or dedicated fire extinguisher.

WARNING. Fires involving lithium-ion batteries are unpredictable and can cause fire to spread significantly, increasing the danger.

Batteries other than lithium-ion batteries.

- For types of battery other than lithium-ion batteries, extinguishers should be provided as appropriate for the specific battery.

WARNING. Using the incorrect type of extinguisher can cause fire to spread significantly, increasing danger to the extinguisher operator.

Minimum provision of class A rated fire extinguishers

- Small storeys under 50m² need only have one extinguisher with a class A rating (minimum rating should be at least 26A).
- There have been no changes for areas above 50m²

Fires involving gases

- Extinguishers should not normally be provided to tackle class C fire hazards
- *Uncontrolled fires involving gas are now very rare indeed. Therefore, the advice for uncontrolled fires involving piped and bottled gases does not encourage the use of portable fire extinguishers, but promotes fire and rescue service guidance*
 - *Raise the alarm and call the fire and rescue service.*
 - *Only while it is safe to do so, try to turn off the gas supply to the leak.*
 - *This is the only safe method of extinguishing such fires. Prior knowledge of the location, and operation method, of gas shut-off valves is, therefore, essential.*
 - *Evacuate the building in the event of fire involving gases.*
- Unless a fire risk assessment deems that extinguishers are to be used by specially trained personnel on a class C fire hazard.

Travel distances

Class A	30m
Class B	10m
Class C	Subject to assessment on a case-by-case basis, by specialist advice (<i>this has changed from 30m</i>)
Class D	Subject to assessment on a case-by-case basis, by specialist advice
Class F	10m
Live electrical equipment	General provision of non-dedicated extinguishers: 30 m
	Provision of dedicated extinguishers for specific hazards: 10 m
Batteries	Lithium-ion batteries in individual small rechargeable devices: from existing coverage;
	Batteries other than lithium-ion batteries: subject to assessment on a case-by-case basis, by specialist advice

Travel distance through doors

- Where the operator is required to open a door to reach the nearest extinguisher, all travel distances should be reduced by 5m for each door.
- You should not be required to pass through a security door that has card or keypad access: extinguishers should be located on the fire hazard side of such a door.