BS 5306-9:2015

BSI Standards Publication

Fire extinguishing installations and equipment on premises –

Part 9: Recharging of portable fire extinguishers – Code of practice

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 14, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 5306 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 March 2015. It was prepared by Technical Committee FSH/2, *Fire extinguishers*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This part of BS 5306 supersedes BS 6643-1:1985 and BS 6643-2:1985, which are withdrawn.

Relationship with other publications

BS 5306 is published in the following parts:

- Part 0: *Guide for selection of installed systems and other fire extinguishing equipment*;
- Part 1: *Hose reels and foam inlets*;
- Part 3: *Commissioning and maintenance of portable fire extinguishers – Code of practice*;
- Part 4: *Specification for carbon dioxide systems*;
- Part 5: *Halon systems*:
  - Section 5.1: *Specification for halon 1301 total flooding systems*;
  - Section 5.2: *Halon 1211 total flooding systems*;
- Part 8: *Selection and positioning of portable fire extinguishers – Code of practice*;
- Part 9: *Recharging of portable fire extinguishers – Code of practice*.

Information about this document

This standard is an amalgamation of BS 6643-1:1985 and BS 6643-2:1985. It is a full revision of the standards, and introduces the following principal changes:

- introduction of verified alternatives;
- clarification of where new components should be used;
- recognition of changes in BS 5306-3;
- guidance on the procedures to be followed during the maintenance process of recharging an extinguisher;
- recognition of changes in relevant legislation.

Hazard warnings

WARNING. This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Use of this document

As a code of practice, this part of BS 5306 takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

In particular, attention is drawn to the following statutory regulations and their associated Guidance Notes:

- Regulatory Reform (Fire Safety) Order 2005 [1] and associated Guidance Notes;
- Fire Safety (Scotland) Regulations 2006 [2] and associated Guidance Notes;
- Fire Precautions (Workplace) Regulations (Northern Ireland) 2001 [3] and associated Guidance Notes;
- Fire (Scotland) Act 2005 [4];
- Fire Safety Regulations (Northern Ireland) 2010 [5];
- Control of Substances Hazardous to Health (COSHH) Regulations 2002 [6];
- Controls on Ozone-Depleting Substances Regulations (Northern Ireland) 2011 [7];
- Chemical (Hazard Information and Packaging for Supply) Regulations 2002 [8];
- Environmental Protection (Controls on Ozone-Depleting Substances) (Amendment) Regulations 2011 [9];
- Environmental Protection (Controls on Ozone-Depleting Substances) (Northern Ireland) Regulations 2003 [10];
- Health and Safety at Work Act, etc. 1974 [11];
- Health and Safety (Safety Signs and Signals) Regulations 1996 [12];
- Health and Safety (Safety Signs and Signals) Regulations (Northern Ireland) 1996 [13];
- Management of Health and Safety at Work Regulations 1999 [14];
- Management of Health and Safety at Work Regulations (Northern Ireland) 2000 [15];
- Pressure Systems Safety Regulations 2000 [16];

- Pressure Systems Safety Regulations (Northern Ireland) 2004 [17];
- Transportable Pressure Vessels Regulations 2001 [18];
- Transportable Pressure Vessels Regulations (Northern Ireland) 2003 [19];
- EC Regulation 1907/2006 [20];
- EC Regulation 1272/2008 [21].

Attention is also drawn to environmental legislation, especially where this concerns the disposal of media that have been replaced during the course of the recharging procedures given in this part of BS 5306.

1 Scope

This part of BS 5306 gives recommendations for the recharging of portable fire extinguishers.

This part of BS 5306 also gives recommendations for components, gas cartridges, propellants and refill extinguishing media for extinguishers.

NOTE Disposable extinguishers are not intended to be recharged and are therefore outside the scope of this part of BS 5306.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 5306-3, *Fire extinguishing installations and equipment on premises – Part 3: Commissioning and maintenance of portable fire extinguishers – Code of practice* [1)]

BS 7863, *Recommendations for colour coding to indicate the extinguishing media contained in portable fire extinguishers*

BS EN 3 (all parts), *Portable fire extinguishers*

BS EN ISO 5923*, Equipment for fire protection and fire fighting – Fire extinguishing media – Carbon dioxide*

3 Terms and definitions

For the purposes of this part of BS 5306, the terms and definitions given in BS 5306-3 and the following apply.

3.1 declaration of conformity
statement by the manufacturer and/or supplier of a component or medium that a verified alternative (**3.3**) is fit for the purpose for which it is to be used and that it ensures the continued safety, reliability and performance of the extinguisher

3.2 recharging
maintenance procedure carried out after complete or partial discharge of an extinguisher, or as part of a scheduled maintenance procedure, to restore the extinguisher to its operational condition

3.3 verified alternative
component or medium, not specified by the original manufacturer of the fire extinguisher, for which assurance has been provided in the form of a declaration of conformity (**3.1**)

NOTE 1 The reliability of a portable fire extinguisher to perform its functions on demand is, to a significant degree, governed by the reliability of individual components. In general, it is advisable that all components, such as body, valve assembly and extinguishing medium, conform to the applicable part(s) of the BS EN 3 series. Users of this part of BS 5306 are advised to consider the desirability of using verified alternatives that are supported by an accredited third-party certification body.

[1)] This part of BS 5306 also gives an informative reference to BS 5306-3:2009.

NOTE 2 Where a verified alternative is used, the maintenance supplier is responsible for the extinguisher and for its subsequent performance as a consequence of the use of the verified alternative.

4 Recharging of extinguishers

4.1 General

Before recharging, water-based extinguishers (including foam extinguishers) should be thoroughly washed out with clean water, but on no account should this procedure be applied to powder, clean agent or carbon dioxide extinguishers, which have to be kept dry.

NOTE Under EC Regulation No. 2037/2000 [22] the use of halons as extinguishing media is restricted to a limited number of "critical uses" (see BS 5306-3:2009, Annex G).

When an extinguisher has been recharged for any reason, the date should be recorded on the extinguisher's maintenance label attached to the extinguisher (see Clause **6**).

4.2 Components and media

4.2.1 General

Components and extinguishing media supplied or specified by the manufacturer of the extinguisher, or verified alternatives, should be used to replace those found to be unsuitable for continued service. Any medium/component used should ensure the continued safety, reliability and performance of the extinguisher.

CAUTION. The recharging of an extinguisher, or the replacement of any of its components in a manner not specified by the original manufacturer (e.g. by using a verified alternative), can be detrimental to the performance of the extinguisher if not carried out correctly.

Where media are found to be below the mass or volume specified, further media should not be added to that contained in the extinguisher (i.e. topping up of media is not allowed).

The nominal mass/volume of the refill should be equal to the nominal mass/volume as stated in the front label of the extinguisher.

Tolerances on the nominal charge should be in accordance with Table 1.

4.2.2 Components

4.2.2.1 General

All components used in the service procedures of BS 5306-3 and the present part of BS 5306 (i.e. BS 5306-9) should be such as to bring the extinguisher back into an operational condition. If replacement parts are required (e.g. if the current part is defective or missing), the procedures in **4.2.2.2** and **4.2.2.3** should be followed.

4.2.2.2 Pressure-retaining components that require replacement

Pressure-retaining components should be new and either:

a) as specified by the original extinguisher manufacturer; or

b) a verified alternative.

Table 1 **Filling tolerances**

Extinguishing medium	Relative tolerance	Minimum mass	Maximum mass
	%	kg	kg
Powder (kg)			
1	±5	MT + 0.950	MT + 1.050
2	±3	MT + 1.940	MT + 2.060
3	±2	MT + 2.940	MT + 3.060
4	±2	MT + 3.920	MT + 4.080
6	±2	MT + 5.880	MT + 6.120
9	±2	MT + 8.820	MT + 9.180
12	±2	MT + 11.760	MT + 12.240
All other media (kg or L)			
2	$^{+0}_{-5}$	MT + 1.900	MT + 2.000
3	$^{+0}_{-5}$	MT + 1.850	MT + 3.000
4	$^{+0}_{-5}$	MT + 3.800	MT + 4.000
5	$^{+0}_{-5}$	MT + 4.750	MT + 5.000
6	$^{+0}_{-5}$	MT + 5.700	MT + 6.000
9	$^{+0}_{-5}$	MT + 8.550	MT + 9.000

NOTE 1 The figures in this table are taken from BS EN 3-7:2009.

NOTE 2 The mass of the empty body (MT) includes all valves, hose and fittings except CO_2 where the empty mass is measured without discharge horn/hose assembly.

4.2.2.3 Non-pressure-retaining components that require replacement

Non-pressure-retaining components should be either:

a) as specified by the original extinguisher manufacturer, including the reuse of a component from an identical model; or

b) a verified alternative.

4.3 Gas cartridges

Replacement gas cartridges for water, water-based (including foam) and powder extinguishers should conform to the appropriate part of BS EN 3, and should be of the correct type (coating, thread and shape) and size (capacity, propellant and dimensions).

WARNING. Use of incorrect gas cartridges can be detrimental to the correct functioning of the extinguisher, and in extreme circumstances could cause the extinguisher to rupture.

CAUTION. It is inadvisable to use gas cartridges that have been retested or re-stamped. Use of retested or re-stamped gas cartridges can be detrimental to the correct functioning of the extinguisher. Stamping of the hexagon can cause distortion and affect the seal of the cartridge

Gas cartridges should be removed from service if more than 10 years have elapsed since the date of manufacture.

4.4 Media

4.4.1 Water and water-based extinguishers (including water plus additive, foam and wet chemical)

4.4.1.1 Water extinguishers

Tap water or similar potable water should be used for refilling water extinguishers.

Where an extinguisher was originally charged with de-ionized water, the extinguisher should be recharged with de-ionized water.

4.4.1.2 Water-based extinguishers (including water plus additive, foam and wet chemical)

In addition to any additives, tap water or similar potable water should be used for refilling water-based extinguishers.

If the water-based extinguisher has an additive for purposes such as corrosion inhibition, freezing point depression, penetration, enhanced wetting, film formation, etc., the extinguisher manufacturer's specified additive or a verified alternative should be used.

4.4.2 Powder

Powder refill charges should be either:

a) as originally, previously or currently specified by the extinguisher manufacturer; or

b) a verified alternative.

When charging powder extinguishers, precautions should be taken in accordance with Annex A.

4.4.3 Carbon dioxide

Carbon dioxide used to refill extinguishers should conform to BS EN ISO 5923.

4.4.4 Clean agents

The extinguishers should be refilled with the same clean agent as originally used, where this is permitted by legislation.

4.5 Propellants

In general, the propellant used for recharging should be:

a) chemically the same as that used in the original manufacture, with or without tracer gas; or

b) chemically the same as that used in the original manufacture but with a different tracer gas to facilitate leak detection.

Exceptions are as follows:

1) where air was used in the original manufacture, nitrogen or air may be used;

2) for water-based extinguishers only, where nitrogen was used in the original manufacture, nitrogen or air may be used;

3) for powder extinguishers only, the moisture content of nitrogen, air or other gas used for recharging should not exceed 31 ppm by mass.

NOTE Air with a moisture content of 31 ppm or less cannot be obtained from normal factory compressed air systems.

The mass of propellant used should be such as to give the correct working pressure at 20 °C. Stored pressure extinguishers are usually charged with propellant to a measured working pressure, and allowance should be made for any temperature difference which might vary the working pressure.

Carbon dioxide used for recharging should conform to BS EN ISO 5923.

5 Evaluation of fitness for further service of extinguishers and actions to be taken

The recharging procedures listed in Table 2 should be carried out for the appropriate type of extinguisher, in accordance with the detailed actions described in Table 3.

NOTE Table 2 shows a numbered sequence, from left to right, of actions necessary to perform a recharge service on the main types of extinguisher. Each action is composed of one or more operations or inspections, the details of which are described in Table 3. It is not necessary, or possible, to perform every action on every type of extinguisher.

Table 2 **Sequence of actions for recharge service procedures for extinguishers**

Extinguisher type	Sequence of actions [A)]
Stored pressure	
Water and water-based (including foam)	1, 2, 3, 6, 7, 8, 9, 12, 14, 15, 18, 20, 22, 23, 25, 27, 28, 29
Powder	1, 2, 3, 6, 7, 8, 9, 12, 16, 17, 19, 20, 22, 23, 25, 27, 28, 29
Primary sealed powder	1, 2, 3, 5, 6, 7, 8, 11, 22, 25, 27, 28, 29
Carbon dioxide	1, 2, 3, 6, 7, 8, 10, 24, 25, 26, 27, 28, 29
Cartridge-operated	
Water and water-based (including foam)	1, 2, 3, 4, 6, 7, 8, 9, 13, 14, 15, 18, 20, 21, 22, 25, 27, 28, 29
Powder	1,2,3,6,7,8,9,13,16,17,19,20,21,22,25,27,28,29

[A)] The numbers refer to actions detailed in Table 3.

Table 3 **Recharge service actions – Initial operations**

Action no.	Component and/or action	Procedure
1	Safety clip and indicating devices	Check the safety clip and indicating devices to determine whether the extinguisher might have been operated. **CAUTION**. Make safe by replacing the safety pin as necessary.
2	External examination	Examine the exterior for corrosion, dents, gouges or damage that could impair the safe operation of the extinguisher, paying particular attention to any plastics headcap for signs of degradation.
3	Operating instructions	Check the operating instructions, which should be in English, for accuracy and legibility

Table 3 **Recharge service actions – Initial operations**

Action no.	Component and/or action	Procedure
4	Removable operating mechanism (e.g. gas cartridge strike knob): water and water-based (including foam)	Carry out this procedure where the extinguisher is designed to have the operating mechanism removed without the discharge of contents or loss of pressure. **CAUTION**. Check for signs that the extinguisher has been used, as the head and hose assembly might be pressurized. To check this, squeeze the lever of the discharge control (also known as the pistol), whilst ensuring that any content is discharged where no damage can be caused. If this check reveals that the extinguisher has been actuated, and is pressurized, then the extinguisher should be discharged in accordance with action 9. Where the extinguisher is not pressurized, remove and check the operating mechanism and discharge control (where fitted) for free movement. Clean and lubricate the operating mechanism, rectify any problems, or replace with a new operating mechanism as necessary. Reassemble and refit any removable operating mechanism.
5	Removable operating mechanism (e.g. stored pressure strike knob): primary sealed powder	Carry out this procedure where the extinguisher is designed to have the operating mechanism removed without the discharge of contents or loss of pressure. **CAUTION**. Check for signs that the extinguisher has been used, as the head and hose assembly might be pressurized. To check this, squeeze the lever of the discharge control (also known as the pistol), whilst ensuring that any content is discharged where no damage can be caused. If this check reveals that the extinguisher has been actuated, and is pressurized, then it should be taken out of service and returned for refilling in accordance with action 11. Under no circumstances attempt to remove the head and hose assembly of a pressurized extinguisher. Where the extinguisher is not pressurized, remove and check the operating mechanism and discharge control (where fitted) for free movement. Clean and lubricate the operating mechanism, rectify any problems, or replace with a new operating mechanism as necessary. Reassemble and refit any removable operating mechanism.
6	Operating mechanism and air passages	Clean if necessary and pass air through the air passages. Check the operating mechanism and discharge control (where fitted) for free movement. Rectify any problems or replace with a new operating mechanism or discharge control as necessary. Protect moving parts and threads against corrosion with a lubricant as recommended by the extinguisher manufacturer. Reassemble and refit any operating mechanism and discharge control.
7	Seals for the discharge horn, hose, nozzle, valve body and hose diaphragm	The seals for the discharge horn, the hose, the nozzle and the valve body should be replaced with new seals when these components are removed from the extinguisher. If the hose is fitted with a diaphragm, this should always be replaced with a new diaphragm. Check the condition and fitness for use of the discharge nozzle, horn and hose, and ensure that the nozzle, horn and hose, if fitted, are not obstructed, cracked, worn, or damaged. Replace with a new nozzle, horn and/or hose if necessary. Reassemble and refit any hose or horn.

Table 3 **Recharge service actions – Initial operations**

Action no.	Component and/or action	Procedure
8	Safety pin	Remove the safety pin and check that the operating lever is undamaged and its movement is unobstructed.
9	Discharge of contents: water and water-based (including foam) charges, powder	Ensure that all assemblies and components checked for safety use are reassembled or replaced prior to discharge. The impact of the discharge of the extinguishing medium on the environment should be taken into account before discharging the extinguisher contents. Discharge the extinguisher (it should only be discharged in an environmentally acceptable manner).
10	Discharge of contents: carbon dioxide	Ensure that all assemblies and components checked for safety use are reassembled or replaced prior to discharge. The impact of the discharge of the extinguishing medium on the environment should be taken into account before discharging the extinguisher contents. **WARNING**. Because of the high vapour pressure of carbon dioxide; actuation of an extinguisher without a hose and horn assembly or a swivel horn assembly fitted is extremely hazardous. Always ensure that the hose and horn assembly or swivel horn assembly is fitted correctly on reassembly and before discharge. Do not discharge in a confined area. Discharge the extinguisher (it should only be discharged in an environmentally acceptable manner).
11	Recharge of contents: primary sealed powder	Primary sealed powder extinguishers require specialist filling equipment. Extinguishers should be returned to the manufacturer/supplier or to a competent person/company with the correct refill equipment, training and spare parts.
12	Opening a stored pressure extinguisher	Extreme caution should be used when opening any extinguisher. Care should be taken to ensure that all residual pressure has been released, and that a pressurized extinguisher is not opened. Using the manufacturer's recommended tool/spanner, unscrew the head assembly slowly to allow any residual pressure to vent from the extinguisher through the venting slots. This should be done outside the premises or in a position where no damage can be caused. Once all residual pressure has been released, completely unscrew and remove the head assembly.
13	Opening a gas cartridge extinguisher	Extreme caution should be used when opening any extinguisher. Care should be taken to ensure that any residual pressure is released, and that a pressurized extinguisher is not opened. Make sure that there is no residual pressure in the extinguisher as follows. Using the manufacturer's recommended tool/spanner, unscrew the head assembly slowly to allow any residual pressure to vent from the extinguisher through the venting slots. This should be done outside the premises or in a position where no damage can be caused. Once all residual pressure has been released, completely unscrew the head assembly. Remove the head assembly. Remove the gas cartridge.
14	Water, water-based, and foam charges	Rinse out the body of the extinguisher with clean water and discard water prior to refilling.

Table 3 **Recharge service actions – Initial operations**

Action no.	Component and/or action	Procedure
15	Body: water, water-based and foam	Examine the interior with the aid of an inspection light. Check for corrosion, especially around the thread or neck, evidence of corrosion under the lining, lining splits, bubbles, loss of adhesion (particularly around the thread neck) or general deterioration of lining.
16	Powder charges	Empty out any residual powder and discard prior to refilling.
17	Body: powder	Examine the interior with the aid of an inspection light. Check for corrosion and deterioration of lining, if fitted.
18	Refilling: water, water-based, and foam charges	Refill the extinguisher in accordance with either: • the extinguisher manufacturer's instructions; or • the medium supplier's instructions. Particular attention should be paid to the medium type, concentration and quantity. Where the additive is in a separate container, remove this container and replace in accordance with the extinguisher manufacturer's instructions. **CAUTION**. It is essential that the appropriate refilling instructions are followed. When refilling, the instructions should never be mixed between the extinguisher manufacturer's instructions and the medium supplier's instructions as this could result in a non-performing extinguisher.
19	Refilling: powder charges	Refill the extinguisher in accordance with either: • the extinguisher manufacturer's instructions; or • the medium supplier's instructions. Particular attention should be paid to the medium type (e.g. ABC, BC), active ingredient (e.g. ABC30, ABC70), brand/manufacturer and quantity. The use of sieves or machines to remove foreign bodies or caked or lumpy material is not recommended (see Annex A).
20	Operating mechanism and air passages	Clean if necessary and pass air through the air passages, paying particular attention to the vent holes (or other venting device) in the headcap. Check that the strainer (where fitted), internal discharge tube and breather valve (where fitted) are unobstructed. Rectify any problems or replace with a new tube or valve if necessary. Renew gas-band, where fitted. Check the operating mechanism and discharge control (where fitted) for free movement. Rectify any problems or replace with a new operating mechanism or discharge control as necessary. Protect moving parts and threads against corrosion with a lubricant as recommended by the extinguisher manufacturer.
21	Gas cartridge	Replace with a new gas cartridge of the propellant type, content, size and coating appropriate to the extinguishing medium as stated by the extinguisher manufacturer.

Table 3 **Recharge service actions – Initial operations**

Action no.	Component and/or action	Procedure
22	Reassembling a stored pressure or gas cartridge extinguisher	Reassemble the extinguisher in accordance with the extinguisher manufacturer's instructions. Ensure that all renewed o-seals are clean and properly seated. When reassembling the headcap assembly onto the extinguisher, ensure that the hose outlet is positioned so that the nozzle can be located in/onto the nozzle clip, where fitted. Using the manufacturer's recommended tool/spanner, tighten the head assembly to ensure that it is tightly affixed and will retain pressure. Install a new indicating device designed to show whether the extinguisher might have been operated.
23	Stored pressure	Re-pressurize the extinguisher in accordance with the manufacturer's instructions. When the extinguisher is fully pressurized, the pressure indicator should be in the green zone.
24	Carbon dioxide	Before refilling the extinguisher, ensure that it is still within the 10 year date range as indicated by the manufacturer's date stamp. Refill the extinguisher in accordance with the manufacturer's instructions. Carbon dioxide used to refill extinguishers should conform to BS EN ISO 5923.
25	Weight check	Weigh the extinguisher according to the extinguisher manufacturer's instructions (in the case of a CO_2 extinguisher, weigh before reassembly of the discharge horn/hose assembly). Record this on the maintenance label (see Table 1).
26	Reassembling a carbon dioxide extinguisher	Reassemble the extinguisher in accordance with the extinguisher manufacturer's instructions. Ensure that all renewed o-seals are clean and properly seated. Refit the swivel horn, or hose and horn, ensuring that it is seated correctly in the valve housing. Tighten the hexagonal retaining nut with the manufacturer's recommended tool/spanner. For swivel horn type, tighten the hexagonal retaining nut sufficiently that the swivel horn remains in operating position (i.e. at approximately 45°) without external support, then reposition the horn down to the vertical (if the hexagonal retaining nut has a grub screw, refit it). For hose and horn type, tighten the hexagonal retaining nut; then stow the horn in accordance with the manufacturer's instructions.
27	Maintenance label	Complete the details on the maintenance label. Where a medium/additive has been used which is a verified alternative then a label should be affixed as recommended in **6.1.3**.
28	Mounting bracket/stand	Check any mounting bracket or stand if accessible and rectify any problems.
29	Report	Write an inspection report advising the responsible person of the state of maintenance of the extinguisher (see **6.2**).

6 Labelling and documentation

6.1 Labelling

6.1.1 General

Any labelling that is applied to the extinguisher should not contain prominent colours that conflict with BS 7863.

6.1.2 Maintenance label

A maintenance label, conforming to BS 5306-3, should be completed upon the conclusion of the recharge, indicating that the extinguisher has been recharged in accordance with this standard.

6.1.3 Verified alternative – Identification of medium

Where verified alternatives have been used these should be identified.

Where a medium/additive has been used which is not the original manufacturer's then a label should be affixed to the extinguisher giving the following information:

a) name and contact details of the recharging organization;

b) name of manufacturer/supplier of the refill;

c) unique product name/code of the refill medium.

NOTE This information is required for health and safety purposes and to identify the appropriate material safety data sheets (MSDS).

The following words should also be included on the recharge label:

> "The performance of this extinguisher may vary in relation to its original marking."

6.2 Documentation

*NOTE The information recommended in **6.2.1** and **6.2.2** may be amalgamated to form one document.*

6.2.1 Provision of a written report

The competent person should advise the responsible person in a written report of any extinguisher that has been condemned and the reason.

6.2.2 Maintenance documentation

The documentation supplied by the recharging company to the client should include the following information:

a) the date of maintenance/recharging;

b) identification of the maintenance technician and/or their signature;

c) the signature of the customer, which should be obtained upon completion of the service visit and prior to the service technician leaving the premises, or a record of the reason why this is not possible (e.g. unmanned sites);

d) all the appropriate MSDS/COSHH data sheets in respect of the substances used in the recharge, including information on where to obtain MSDS/COSHH data;

e) if applicable, notification that verified alternatives have been used.

NOTE Guidance is available at http://www.hse.gov.uk/coshh/basics/datasheets.htm [2)].

[2)] Last accessed 18 March 2015.

Annex A (normative)

Precautions for charging powder extinguishers

Before any powder extinguisher is opened it should be ascertained that, during inspection and maintenance, the precautions described in this Annex can be and will be observed.

Only extinguishers containing the same type of powder should be opened and examined at any one time.

Mixing or cross-contamination of different types of powder should be avoided.

WARNING. Some mixtures can react, sometimes after a long delay, producing water and carbon dioxide with consequent caking of the powder and, in closed containers, a pressure rise. This rise in pressure could cause the extinguisher to explode.

Powder extinguishers should be opened only in dry conditions, and for the minimum time necessary for examination, to minimize the effect of atmospheric moisture on the powder.

CAUTION. Powder can absorb moisture if exposed to air of high relative humidity, or if the powder is colder than the ambient air, which could render the extinguisher inoperable.

Powder refills should only be opened immediately before use, and bulk refills should be resealed immediately after use, to reduce the possibility of contamination or absorption of moisture from the atmosphere.

In the absence of specialist closed powder recovery/filling equipment, reusing powder should be avoided, as reused powder can eventually become lumpy and interrupt the flow of powder when the extinguisher is operated.

Where closed powder recovery/filling equipment is used, each piece of equipment should be dedicated for use with only one type of powder.

Bibliography

Standards publications

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 5306-0, *Fire protection installations and equipment on premises – Part 0: Guide for selection of installed systems and other fire equipment*

BS 5306-1, *Code of practice for fire extinguishing installations and equipment on premises – Part 1: Hose reels and foam inlets*

BS 5306-4, *Fire extinguishing installations and equipment on premises – Part 4: Specification for carbon dioxide systems*

BS 5306-5.1, *Fire extinguishing installations and equipment on premises – Part 5: Halon systems – Section 5.1: Specification for halon 1301 total flooding systems*

BS 5306-5.2, *Code of practice for fire extinguishing installations and equipment on premises – Part 5: Halon systems – Section 5.2: Halon 1211 total flooding systems*

BS 5306-8, *Fire extinguishing installations and equipment on premises – Part 8: Selection and positioning of portable fire extinguishers – Code of practice*

Other publications

[1] GREAT BRITAIN. Regulatory Reform (Fire Safety) Order 2005. London: The Stationery Office.

[2] SCOTLAND. Fire Safety (Scotland) Regulations 2006. London: The Stationery Office.

[3] GREAT BRITAIN. Fire Precautions (Workplace) Regulations (Northern Ireland) 2001. London: The Stationery Office.

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[6] GREAT BRITAIN. Control of Substances Hazardous to Health (COSHH) Regulations 2002. London: The Stationery Office.

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