BS 5306-3:2017

BSI Standards Publication

# Fire extinguishing installations and equipment on premises –

Part 3: Commissioning and maintenance of portable fire extinguishers – Code of practice

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# 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 October 2017. 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This part of BS 5306 supersedes BS 5306-3:2009, which is withdrawn.

## Relationship with other publications

The other parts of BS 5306 published are as follows:

- Part 0: *Guide for selection of installed systems and other fire extinguishing equipment;*
- Part 1: *Hose reels and foam inlets;*
- Part 2: *Specification for sprinkler systems;*
- Part 4: *Specification for carbon dioxide systems;*
- Part 5: *Halon systems:*
  - Section 5.1: *Specification for Halon 1301 total flooding systems;*
  - Section 5.2: *Specification for Halon 1211 total flooding systems;*
- Part 6: *Foam systems:*
  - Section 6.1: *Foam systems – Specification for low expansion foam systems;*
  - Section 6.2: *Foam systems – Specification for medium and high expansion foam systems;*
- Part 7: *Extinguishing powder systems;*
- Part 8: *Selection and positioning of portable fire extinguishers;*
- Part 9: *Recharging of portable fire extinguishers.*

## Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- greater clarification given of the procedures;
- improvement of the layout of the standard to improve ease of reading and interpretation;
- recognition of changes in relevant legislation;
- reference to fire risk assessments;
- clarification of linkage to BS 5306-8;
- inclusion of references to BS 5306-9;
- addition of fire safety logbooks;
- reordering of annexes as follows:
  - Annex A – commissioning;
  - Annex B – basic service;

 

- Annex C – extended service;
- Annex D – recharge;
- Annex E – overhaul;
- Annex F – halon extinguishers;
- Annex G – examples of labels;
- Annex H – extinguishers conforming to withdrawn British Standards;
- Annex I – training of the competent person.

## 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.

Any user claiming compliance with this part of BS 5306 is expected to be able to justify any course of action that deviates from its recommendations.

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

## 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 its associated guidelines;
- Fire Safety (Scotland) Regulations 2006 [2] and its associated guidelines;
- Fire Safety Regulations (Northern Ireland) 2010 [3];
- Pressure Systems Safety Regulations 2000 [4];
- Transportable Pressure Vessels Regulations 2001 [5];
- Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2002 [6];

 

- Environmental Protection (Controls on Ozone-Depleting Substances) (Northern Ireland) Regulations 2003 [7];
- Health and Safety at Work, etc. Act 1974 [8];
- Management of Health and Safety at Work Regulations 1999 [9].

 

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## 1 Scope

This part of BS 5306 gives recommendations for the initial commissioning of all portable fire extinguishers and schedules for the subsequent maintenance of extinguishers installed in all locations. It also gives recommendations for handling certain obsolete types of extinguishers.

## 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 5306-8, *Fire extinguishing installations and equipment on premises — Part 8: Selection and positioning of portable fire extinguishers — Code of practice*[1]

BS 5306-9, *Fire extinguishing installations and equipment on premises — Part 9: Recharging of portable fire extinguishers — Code of practice*

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

BS EN 1802, *Transportable gas cylinders — Periodic inspection and testing of seamless aluminium alloy gas cylinders*[1]

BS EN 1968, *Transportable gas cylinders — Periodic inspection and testing of seamless steel gas cylinders*[1]

BS EN 15004-2, *Fixed firefighting systems — Gas extinguishing systems — Part 2: Physical properties and system design of gas extinguishing systems for FK-5-1-12 extinguishant*

BS EN 15004-5, *Fixed firefighting systems — Gas extinguishing systems — Part 5: Physical properties and system design of gas extinguishing systems for HFC 227ea extinguishant*

BS EN 15004-9, *Fixed firefighting systems — Gas extinguishing systems — Part 9: Physical properties and system design of gas extinguishing systems for IG-55 extinguishant*

BS EN 15004-10, *Fixed firefighting systems — Gas extinguishing systems — Part 10: Physical properties and system design of gas extinguishing systems for IG-541 extinguishant*

BS EN 27201-1, *Fire protection — Fire extinguishing media — Halogenated hydrocarbons — Part 1: Specifications for halon 1211 and halon 1301*

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 EN 3, BS 5306-9 and the following apply.

*NOTE The term water-based is used in this part of BS 5306 and is to be taken to include water, water plus additive, foam and wet chemical types of extinguisher.*

### 3.1 additive

chemical added to an extinguishing medium for such purposes as corrosion inhibition, freezing point depression, penetration, enhanced wetting, and film or coating formation

1 This part of BS 5306 gives informative references to BS 5306-8:2012, BS EN 1802:2002 and BS EN 1968:2002.

### 3.2 body

part of an extinguisher designed to withstand internal pressure, excluding its accessories but including its permanently attached fittings

*NOTE Permanently attached parts are usually welded or brazed.*

### 3.3 body cover

non-pressure-bearing outer case of an extinguisher

### 3.4 body fittings

those parts of an extinguisher that, under normal working conditions, are permanently attached to the body and are subjected to the working pressure

*NOTE Body fittings, which are fixed to or screwed onto the body, include at least the following:*

- *control device(s);*
- *hose assembly and/or horns and/or nozzles;*
- *head assembly (this also constitutes the main closure);*
- *operating device.*

### 3.5 charge

mass or volume of extinguishing medium contained in an extinguisher

*NOTE The charge of a water-based medium is expressed as a volume in litres. Charges for other media are expressed as a mass in kilograms.*

### 3.6 competent person

person with the qualifications, training and experience, with access to the relevant tools, equipment and information, manuals and knowledge of any special procedures recommended by the manufacturer of an extinguisher, to carry out the relevant maintenance procedures

*NOTE 1 Information on the training which a competent person is expected to undergo is given in Annex I.*

*NOTE 2 This person can also be referred to as, for example, maintenance technician, service technician or extinguisher technician.*

### 3.7 extinguishing medium

substance contained in an extinguisher which causes extinction of a fire

### 3.8 fire legislation

current UK legislation relating to fire safety, i.e.

- Regulatory Reform (Fire Safety) Order 2005 [1];
- Fire Safety (Scotland) Regulations 2006 [2];
- Fire Safety Regulations (Northern Ireland) 2010 [3]

### 3.9 gas cartridge

pressure container that fits into, or is attached to, an extinguisher and that contains an expellant gas that, on operation of the extinguisher, expels the extinguishing medium

### 3.10 gas cartridge extinguisher

extinguisher from which the extinguishing medium is expelled, on the actuation of the operating mechanism, by pressure released from a gas cartridge

### 3.11 plastics head assembly

component manufactured from plastics designed to retain working pressure upon actuation of an extinguisher

*NOTE This includes plastics head assemblies retained by a metal collar, but excludes metal head assemblies which have a plastics cover where the plastics component does not retain working pressure.*

### 3.12 portable fire extinguisher

extinguisher which is designed to be carried and operated by hand and which, in its full operational condition, has a mass of not more than 20 kg

*NOTE This is also referred to in this part of BS 5306 as an "extinguisher".*

### 3.13 primary sealed stored pressure extinguisher

stored pressure extinguisher in which the operating head and the valves controlling the flow of extinguishing medium during discharge can be detached from the body of the extinguisher without releasing propellant or medium, which are retained in the body by a closure that is ruptured on operation

### 3.14 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 full operational condition

### 3.15 responsible person

person or persons responsible for, or having effective control over, fire safety provisions adopted in or appropriate to the premises or building or hazard where an extinguisher is installed

*NOTE For the purposes of this part of BS 5306, the term "responsible person" includes a nominated representative or duty holder in Scotland, and is the person defined by this term in legislative structures within UK legislation.*

### 3.16 stored pressure extinguisher

extinguisher from which the extinguishing medium is expelled, on the actuation of the operating mechanism, by pressure stored within the body

## 4 Safety precautions for extinguishers

*NOTE 1 Safety instructions are given throughout this standard. General warnings/precautions are given in this clause.*

*NOTE 2 Attention is drawn to the Health and Safety at Work etc. Act 1974 [8], the Management of Health and Safety at Work Regulations 1999 [9] and fire legislation ([1] to [3]).*

*NOTE 3 Recommendations for evaluating fitness for service are given in Clause **10**.*

### 4.1 Precautions for opening extinguishers

| |
|---|
| **WARNING**. It is extremely hazardous to open an extinguisher when pressurized. |

At all times, when attempting to remove parts from extinguishers, competent persons should ensure that they are clear of any parts which might be ejected.

Under no circumstances should any attempt be made to remove the valves of carbon dioxide extinguishers or other high pressure extinguishers or cartridges under field conditions.

Extreme caution should be used when opening any extinguisher.

## 4.2 Precautions for specific types of extinguisher

### 4.2.1 Carbon dioxide extinguishers

**WARNING**. Because of the high vapour pressure of carbon dioxide, it is extremely hazardous to open a carbon dioxide extinguisher, or to actuate a carbon dioxide extinguisher without a hose/horn assembly fitted.

The safety pin and anti-tamper seal should be in place before removing the hose/horn assembly.

Under no circumstances should an attempt be made to open a carbon dioxide extinguisher.

### 4.2.2 Gas cartridge extinguisher

**WARNING**. Because of the high pressure of the gas, it is extremely hazardous to open a gas cartridge extinguisher when pressurized.

Extreme caution should be used when opening a gas cartridge extinguisher. Care should be taken when removing, refitting or replacing a gas cartridge to ensure that any residual pressure is released. Pressurized extinguishers should not be opened.

The safety pin and anti-tamper seal should be in place to prevent accidental discharge when opening a gas cartridge extinguisher.

### 4.2.3 Powder — Primary sealed extinguisher

**WARNING**. It is extremely hazardous to open a primary sealed extinguisher when pressurized.

The extinguisher should be checked for signs that it has been used and that the head and hose assembly might be pressurized. To check this, squeeze the lever of the discharge pistol, whilst ensuring that any powder is discharged where no damage can be caused. If this check reveals that the extinguisher has been actuated, and the head and hose assembly is pressurized, then it should be taken out of service and returned for refilling. Under no circumstances should the head and hose assembly of a pressurized extinguisher be removed.

The safety pin should not be removed from the head whilst attached to the body assembly as the strike knob could be inadvertently depressed, resulting in the pressurization of the head and hose assembly.

### 4.2.4 Stored pressure extinguisher

**WARNING**. It is extremely hazardous to open a stored pressure extinguisher when pressurized.

Extreme caution should be used when opening a stored pressure extinguisher. Care should be taken to ensure that any residual pressure is released. Pressurized extinguishers should not be opened.

## 4.3 Precautions for charging powder extinguishers

**WARNING**. The mixing or cross-contamination of different types of powder can cause a reaction, sometimes after a long delay, producing water and carbon dioxide with consequent caking of the dry powder and, in closed containers, a pressure rise. This rise in pressure could cause the extinguisher to explode.

**CAUTION**. Powder can absorb harmful amounts of moisture if exposed to air of high relative humidity, or if the powder is colder than the ambient air.

**CAUTION**. Reused powder can become lumpy and interrupt the flow of powder when the extinguisher is operated.

The following precautions should be taken when charging powder extinguishers.

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

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

c) There should be no mixing or cross-contamination of different types of powder.

d) 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.

e) In the absence of specialist closed powder recovery/filling equipment, reuse of powder should be avoided.

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

# 5 Installation

## 5.1 Commissioning

All extinguishers should be subject to commissioning on initial positioning.

The commissioning of an extinguisher should be carried out by a competent person as defined in **3.6**. Upon removal from its packaging and transit protection, and immediately prior to placing in its designated place, the extinguisher should undergo the sequence of commissioning service actions described in Annex A, taking into account the safety precautions given in Clause **4**.

Upon completion of the above procedures the extinguisher should then be installed and positioned in accordance with BS 5306-8.

## 5.2 Mounting

Small extinguishers with a total mass up to and including 4 kg should be mounted so as to position the handle up to 1.5 m from the floor, but the carrying handle of larger, heavier extinguishers should be up to 1 m from the floor.

**WARNING**. Extinguishers can cause injuries if they are dislodged and fall onto limbs or bodies.

A risk assessment should be carried out for all premises.

*NOTE 1 Particularly high-risk premises include those where young or vulnerable persons are likely to be present (schools, care homes, etc.).*

*NOTE 2 Special brackets or increased mounting heights may be specified in the health and safety risk assessment instigated by the responsible person.*

Extinguishers sited in areas that are more susceptible to being dislodged (e.g. schools, colleges and fast food outlets) should, where practicable, be installed in recessed housings, or in suitable cabinets appropriate to the specific location (e.g. no sharp edges or corners). Any mounting bracket used should conform to the requirements of BS EN 3-7.

*NOTE 3 Extinguishers may also be positioned on fire-stands, fire-points or in cabinets, in which case mounting heights may be specified in the health and safety risk assessment instigated by the responsible person.*

## 6 Maintenance intervals

*COMMENTARY ON CLAUSE **6***

*It is the duty of the responsible person to ensure that extinguishers are maintained regularly by a competent person. Portable fire extinguishers are regarded as "life safety equipment" and a planned system of maintenance is intended to ensure that the equipment is:*

- *in an efficient working state (safe);*
- *in working order (reliable);*
- *in good repair (efficient);*
- *suitable for the hazard (fit for purpose).*

### 6.1 General

After commissioning, portable fire extinguishers are subject to four types of service (basic service, extended service, recharge and overhaul), which should be carried out at intervals recommended in Table 1, in accordance with Annex B, Annex C, Annex D and Annex E respectively.

After service, a written report should be provided, giving the current status of the extinguishers together with any that are deemed unsuitable for the hazard.

*NOTE The Management of Health and Safety at Work Regulations 1999 [9] require this to be carried out by a competent person.*

The competent person should inform the responsible person of their duty to ensure that a planned maintenance programme is in place, to ensure that the extinguisher is in an efficient state, in efficient working order, in good repair and suitable for the fire hazard (see Clause **11**).

### 6.2 Basic service

This service should be performed for all extinguishers at least annually (see Table 1) to check that:

a) the extinguisher is still safe for use and fit for purpose;

b) the hazard in the location has not changed;

c) the extinguisher has not been tampered with or used;

d) the media and propellant are within allowances; and

e) the extinguisher will work if required.

### 6.3 Extended service (low pressure extinguishers)

This service should be performed every 5 years or 10 years for primary sealed extinguishers (see Table 1). In addition to carrying out the basic service, the extinguisher should be discharged to check that it will work when operated (this gives an opportunity to replace with fresh media).

*NOTE 1 In the case of stored pressure extinguishers, once the extinguisher has been discharged, the removal of the head assembly allows:*

- *the interior of the extinguisher to be checked;*
- *inspection of the internal parts of the valve;*
- *the gauge to be checked when unpressurized, i.e. at zero pressure indication;*
- *the gauge to be checked when repressurized, to make sure the indication returns to the green zone.*

*NOTE 2 Low pressure extinguishers are those having an operating pressure equal to or lower than 30 bar.*

**Table 1** — *Maintenance intervals* [A]

| Type of extinguisher | Basic service [B], [C], [D], [E] (see Annex B) | Extended service [B], [C], [D], [E] (see Annex C) | Overhaul [E] (see Annex E) |
|---|---|---|---|
| Water-based | 12-monthly | Every 5 years | — |
| Powder | 12-monthly | Every 5 years | — |
| Powder-primary sealed | 12-monthly | Every 10 years [F] | — |
| Clean agent | 12-monthly | — | Every 10 years |
| Halon [G] | 12-monthly | — | Every 10 years |
| $CO_2$ [H] | 12-monthly | — | Every 10 years |

[A] The intervals in this table disregard any recharging of the extinguisher.

[B] The maintenance intervals given for basic and extended service have for practical purposes a tolerance of ±1 month.

[C] Intervals should be taken from:

- basic service: date of commissioning or the date of last service;
- extended service:
  - water-based and powder: 5 years from the date of commissioning or 6 years from the date of manufacture of the extinguishers, whichever is sooner, and subsequently every 5 years from the date of the last extended service;
  - powder-primary sealed: 10 years from the date of commissioning or 11 years from the date of manufacture of the extinguisher, whichever is sooner, and subsequently every 10 years from the date of the last extended service.

[D] Intervals may be shortened on the recommendation of the competent person where inspection reveals environmental and/or special hazards, or at the request of the responsible person where known faults are possible or likely or any manufacturer's instructions.

[E] Replacement of parts does not affect these intervals. For example, if the hose of a water-based extinguisher is replaced after the extinguisher has been in service for 6 months from commissioning then the basic service should be carried out after a further 6 months.

[F] Primary sealed stored pressure extinguishers should be returned to the manufacturer/supplier for recharging.

[G] Service of this type of extinguisher may only be carried out if the extinguisher meets the criteria of the "critical uses" in Annex VII of EC Regulation 1005/2009 [10] (see Annex F).

[H] Intervals for $CO_2$ extinguishers: BS EN 1802:2002 (Clause 5) and BS EN 1968:2002 (Clause 5) require that the stamped date of manufacture or last overhaul be used.

## 6.4 Recharge

This service should be performed whenever an extinguisher is used/partially used, has been subjected to an extended service or overhaul, or has been found to have incorrect mass during a basic service.

*NOTE The service restores the extinguisher contents back to the nominal charge stated on the front of the extinguisher and returns it to operational condition.*

## 6.5 Overhaul (high pressure extinguishers)

An overhaul should be performed on high pressure extinguishers only, primarily carbon dioxide extinguishers.

*NOTE 1 This usually cannot be carried out in the field.*

*NOTE 2 The overhaul involves discharging the extinguisher, removing and discarding the head assembly and then subjecting the body to a hydraulic pressure test in excess of 200 bar. If the body passes the test, it is stamped on the shoulder with the date of the pressure test and a new head assembly fitted, giving it another ten years of life. It may*

*also be repainted and relabelled. As these extinguishers are classified as "life safety equipment", it is the legal duty of the responsible person to submit this type of extinguisher to an overhaul immediately it is due.*

*NOTE 3 High pressure extinguishers are those having an operating pressure greater than 30 bar.*

## 7 Labelling

### 7.1 Application of labelling

Any labelling that is applied to the extinguisher should not obscure any of the following marking parts required by BS EN 3-7:

- Part 1: "FIRE EXTINGUISHER", fire rating(s), nominal charge;
- Part 2: instructions for use;
- Part 3: information, warnings, restrictions of use;
- Part 4: maintenance details, filling details, technical data.

*NOTE It is not good practice for a service company, who is not the supplier (distributor), to cover up the name and address of the manufacturer or supplier (distributor).*

### 7.2 Maintenance label

The maintenance record should be indelibly marked on a durable label that is fixed firmly to the extinguisher without obscuring any of the manufacturer's markings and instructions. Where a new label is affixed, the date of commissioning or the last extended service/overhaul together with respective mass should be marked on the new label (see Note 1).

*NOTE 1 It is permissible to cover/remove the previous maintenance label providing the data detailed in this subclause is carried forward to the new label.*

*NOTE 2 An illustration of a typical maintenance label is shown in Annex G.*

The following information should be given on the maintenance label:

a) type of action (commissioning, basic service, extended service, recharge, overhaul, condemned, corrective action required);

b) name and postal address of the maintenance supplier;

c) a mark clearly identifying the competent person;

d) the date (year and month) of the action in a) above;

e) the measured mass of the extinguisher at the time of maintenance, in kilograms;

f) the date (year and month) of commissioning or the last extended service/overhaul;

*NOTE 3 It might also be appropriate to mark the year and month of the next maintenance – this is a legal requirement if the extinguisher is to be installed under the ADR agreement [11].*

g) a statement to the effect that the extinguisher has been maintained in accordance with this standard, i.e. BS 5306-3. [2]

This information should be readable without any special equipment.

Any additional information for the benefit of competent persons may be shown in a more compact form, such as bar codes.

*NOTE 4 The information on the maintenance label of each extinguisher may additionally be entered into a central record. In this way one aspect of the important information on fire prevention can be kept readily available.*

2 Marking BS 5306-3 on or in relation to a product represents the maintainer's declaration of conformity, i.e. a claim by or on behalf of the maintainer that the maintenance has been carried out in accordance with the recommendations given in this standard. The accuracy of the claim is solely the claimant's responsibility. Such a declaration is not to be confused with third-party certification of conformity.

### 7.3 Corrective action label

Where the type of action is "corrective action required", the reason for the action should be marked on the maintenance label. In addition, a caution or warning label should be fixed to the extinguisher to inform the prospective operator of potentially non-conforming equipment.

*NOTE An illustration of a typical corrective action label is shown in Annex G.*

## 8 Recharging of extinguishers

### 8.1 Procedure

The procedures outlined in Annex D should be followed, together with those recommended in BS 5306-9 and those detailed by the extinguisher manufacturer. Before recharging, water-based extinguishers should be thoroughly washed out with clean water, but this procedure should on no account be applied to powder, halon, clean agent or carbon dioxide extinguishers, which have to be kept completely free from water.

For water-based and powder extinguishers, either refill charges recommended by the extinguisher manufacturer, or a verified alternative should be used as defined in BS 5306-9.

For halon, clean agent and carbon dioxide extinguishers, equivalent charges conforming to the following standards may be used.

a) For carbon dioxide extinguishers, carbon dioxide conforming to BS EN ISO 5923 or as specified in BS EN 3-7 should be used.

b) For clean agent extinguishers, clean agents conforming to BS EN 15004-2, BS EN 15004-5, BS EN 15004-9 and BS EN 15004-10 or as specified in BS EN 3-7 should be used.

c) For halon extinguishers, halons conforming to BS EN 27201-1 or as specified in BS EN 3-7 should be used.

*NOTE Under EC Regulation No. 2037/2000 [12] the use of halons as extinguishing media is restricted to a limited number of "critical uses" (see Annex F).*

When an extinguisher has been recharged for any reason, the date of recharging should be recorded along with the verified alternative (if used), the mark identifying the competent person and the new mass, on the extinguisher's maintenance label affixed to the extinguisher (see **7.2**).

### 8.2 Gas cartridges

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

Care should be taken to use the appropriate gas cartridge as specified by the manufacturer.

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

## 9 Replacement of components

Components and extinguishing media supplied or specified by the manufacturer of the extinguisher, or verified alternatives in accordance with BS 5306-9, 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.

Only anti-tamper components or mechanisms recommended by the extinguisher manufacturer or a verified alternative should be used.

*NOTE 1 It is not advised to combine mechanisms such as using anti-tamper indicators in addition to extinguisher model specific pins recommended by the manufacturer.*

**CAUTION**. The recharging of an extinguisher, or the replacement of any of its components in a manner not specified by the original manufacturer or not in accordance with BS 5306-9, 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 on the front label of the extinguisher.

*NOTE 2 Specific tolerances are given in BS 5306-9.*

## 10 Evaluation of fitness for service of extinguishers and actions to be taken

### 10.1 General

Account should be taken of information contained within safety/advisory notices and product recalls issued by regulatory/trade bodies and product manufacturers before evaluating fitness for continued service of an extinguisher.

Defective extinguishers should be placed in one of the following categories: “condemned” or “corrective action required”.

*NOTE Annex H gives information on extinguishers that were manufactured in accordance with British Standards that have now been withdrawn.*

### 10.2 Extinguishers which are to be condemned

#### 10.2.1 General

**WARNING**. There might be safety issues relating to the extinguisher under evaluation.

Any extinguisher with a major defect or defects which make it unsafe for use, and which cannot be rectified during maintenance, should immediately be made safe, removed from its designated place, and marked “CONDEMNED” together with the reason for this assessment. The responsible person should be advised in the written report (see **11.1**) that a permanent replacement is needed as soon as possible.

*NOTE 1 Evaluation of whether the defect, damage, wear or corrosion an extinguisher has been subjected to make it unsafe for use or unfit for service depends on the judgement of the competent person.*

*NOTE 2 Non-exhaustive lists of examples of the conditions that might affect the function or safety of an extinguisher are given in **10.2.2** and **10.2.3**.*

#### 10.2.2 Conditions indicating that an extinguisher is unsafe for use

**WARNING**. The most serious hazard presented by a defective extinguisher is the sudden uncontrolled release of pressure or ejection of parts.

The extinguisher should be evaluated for any conditions which indicate that it might be unsafe for use, including but not limited to:

a) corrosion, wear, damage to threads of any pressure-retaining part;

b) corrosion of welds;

c) extensive general corrosion or severe pitting;

d) dents, gouges or any other damage in the body or body cover;

e) fire damage to the body, body cover or body fittings;

f) for metal-bodied extinguishers:

   1) any split in a plastics lining;

   2) extensive corrosion or pitting of the body material;

   3) corrosion of the metal body under a plastics lining;

   4) lifting or detachment of a plastics lining from the body;

g) for any non-metal extinguisher body:

   1) any corrosion, damage, fault or wear of any part intrinsic to the effectiveness of the body material;

   2) any non-minor damage from abrasions or cuts;

   3) any unintended bulge, depression, cracking or implosion;

   4) any evidence of any chemical attack or UV degradation, including:

      i) any dissolution, or the pitting of the surface;

      ii) materials feeling soft or sticky;

      iii) any unexplained change to, or unevenness in, appearance or finish such as discolouration, or change in reflectivity; and

      iv) the presence of liquid/chemical material that has, or might have, come into contact with the extinguisher body that is either unidentified or identified as not compatible with the materials;

   5) evidence of ingress of abrasive particulate into the body;

h) the failure of any body cover that provides any protection for the extinguisher body, other than where such failure will not result in damage to the extinguisher body;

i) UV degradation of the body and/or body cover.

### 10.2.3 Conditions, if not rectified, indicating that an extinguisher is unsafe for use

If any of the following conditions are present, they should be either rectified by the replacement of the appropriate components, or the extinguisher condemned:

a) overpainting or application of any other coating, film or colouring to any plastics component that could be subject to pressure;

b) UV degradation of plastics components;

c) illegible marking or operating instructions;

d) operating instructions not in English. Multiple languages may be present for operating instructions but one of them should be English.

### 10.2.4 Obsolete extinguishers

Obsolete extinguishers should be marked “CONDEMNED” together with the reason for this assessment, and the competent person should advise the responsible person, in the written

report (see **11.1**), that the extinguisher has been condemned and that it should be replaced by an extinguisher for which this standard provides a maintenance schedule.

*NOTE 1 Maintenance schedules for extinguishers that are obsolete (because of their type, construction, method of operation, or condition) are not provided in this part of BS 5306. Examples of such extinguishers are as follows:*

- *soda acid extinguishers;*
- *extinguishers with a riveted body;*
- *extinguishers with a non-metal body manufactured prior to the year 2002;*
- *extinguishers that require inversion to operate;*
- *non-refillable extinguishers that have reached their expiry date.*

*NOTE 2 Attention is drawn to the Pressure Equipment (Safety) Regulations 2016 [13] in respect of the legal requirements for CE marking.*

### 10.3 Extinguishers which require corrective action

When undertaking maintenance in a particular location, the competent person should ensure that they have available the number and types of spare parts that might be required to service the extinguishers involved (see Clause **9**).

If the required spare parts are not available for any of these extinguishers, the maintenance should be interrupted and the extinguisher made safe, removed from its designated place and marked "WARNING: CORRECTIVE ACTION REQUIRED", together with the reason for this assessment; and the competent person should advise the responsible person, in the written report (see **11.1**), that the maintenance has been interrupted.

*NOTE An illustration of a corrective action label is shown in Annex G.*

The competent person should return to the site when spare parts become available and complete the maintenance, or, if the parts prove to be unobtainable, should mark the extinguisher "CONDEMNED" together with the reason for this assessment, and should advise the responsible person, in the written report (see **11.1**), that the extinguisher has been condemned and that it should be replaced by an extinguisher for which this standard provides a maintenance schedule.

Where the maintenance procedures recommended in this part of BS 5306 are either unable to be completed or refused by the owner or responsible person, the extinguisher should be marked "CORRECTIVE ACTION REQUIRED", together with the reason for this action; and the competent person should advise the responsible person, in the written report (see **11.1**), that the maintenance has not been completed in accordance with this standard.

Any documentation referring to this extinguisher should make it clear that the necessary maintenance has not been carried out and that the provision of fire cover might be below what is required (see BS 5306-8).

## 11 Information to be provided to the responsible person

*COMMENTARY ON CLAUSE **11***

*As portable fire extinguishers are regarded as "life safety equipment", the competent person is expected to remind the responsible person of their duty to ensure that a planned maintenance programme is in place, to ensure that the extinguisher is in an efficient state, in efficient working order, in good repair and suitable for the fire hazard (see Clause **6**).*

### 11.1 Provision of a written report

The competent person should provide the responsible person with a written maintenance report (this could be hard copy and/or electronic) that includes:

a) the status of all portable fire extinguishers included in the maintenance report, including:

   1) all in serviceable condition;

   2) all non-conforming equipment (condemned, corrective action required and/or are missing); and

   3) recommendations for appropriate corrective action or reference to where this information can be found;

b) a statement that, apart from non-conforming extinguishers as recorded, all portable fire extinguishers have been maintained in accordance with this standard, i.e. BS 5306-3;

c) the reason for any condemned extinguishers;

d) any permanent replacement extinguishers required to replace those extinguishers reported as condemned, corrective action required and/or missing;

e) details of any additional extinguishers or actions required to ensure that the level of fire protection cover at the premises is at least sufficient and, where applicable, in accordance with BS 5306-8, together with a statement concerning the responsible person's obligation under fire legislation to provide an appropriate level of fire-fighting equipment at all times;

f) an instruction that any replacement or additional extinguishers reported in d) or e) should be provided as soon as possible;

g) the name, postal address and telephone number of the maintenance company;

h) the identification of the maintenance technician, and date(s) of maintenance;

i) acknowledgment/receipt of the written report by the responsible person, e.g. the signature of the responsible person or their representative, 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); or electronic acknowledgement;

j) instructions with regard to the fire risk assessment in accordance with **11.3**;

k) instructions with regard to the fire logbook in accordance with **11.4**;

l) any inappropriately sited extinguishers.

*NOTE 1 The written report provided by the competent person may include a certificate of inspection/service certificate/engineer's report given to the responsible person or their representative at the time of the conclusion of the maintenance.*

*NOTE 2 It is good practice to include relevant information from the written report in a fire logbook.*

*NOTE 3 It is good practice to ask to see a copy of the fire risk assessment for the premises. If this is not available or provided a record is to be kept to this effect and included in the written report.*

### 11.2 Instructions for visual inspection

The competent person should advise the responsible person to carry out visual inspections of all extinguishers at regular intervals. This advice should include the following instructions.

a) These visual inspections should be carried out at least once a month. When circumstances require, inspections should be carried out more frequently.

   *NOTE 1 Fire legislation ([1] to [3]) and its associated Guidance Notes suggest that good practice is to determine whether the extinguisher has been operated and to check for damage on a monthly basis.*

b) When carrying out these visual inspections, it should be ensured that:

1) each extinguisher is correctly located in its designated place;

2) each extinguisher is unobstructed and visible;

3) the operating instructions of each extinguisher are clean and legible and face outwards;

4) each extinguisher has not been operated and is not obviously damaged or has any missing parts;

5) the reading of any pressure gauge is within the green zone;

6) any indicator fitted to an extinguisher is within operational and safety limits;

7) the tamper indicators of each extinguisher are not broken or missing.

c) The responsible person should record the results (e.g. in a fire logbook) of these visual inspections and arrange for corrective action, where necessary, by a competent person. In the event of doubt, the responsible person should arrange for a competent person to examine the extinguisher.

*NOTE 2 Responsible persons have obligations under fire legislation ([1] to [3]) to ensure that extinguishing equipment is maintained in an efficient state, in good working order and in good repair.*

## 11.3 Fire risk assessment (requirement for portable fire extinguishers)

*NOTE 1 A fire risk assessment is a legal requirement for virtually all non-domestic premises, and for certain multiple-occupancy dwellings and parts of such dwellings. Guidance is given in PAS 79. The responsible person also has legal duties relating to the passing of relevant information to competent persons.*

*NOTE 2 In addition to being an important component of a holistic fire safety approach, BS 5306-8 recommends that the responsible person carries out a fire risk assessment.*

The competent person should advise the responsible person that the fire risk assessment in respect of the requirement for extinguishers should cover at least the following:

a) any potential fire hazard;

b) any requirements over and above the minimum scale of provision in BS 5306-8;

c) any specified minimum numbers of spare extinguishers.

The competent person should obtain, wherever practicable, the fire risk assessment for the premises at the time of maintenance.

## 11.4 Fire logbook

The competent person should advise the responsible person that a fire logbook should be kept for the purpose of recording all events that occur in respect of the extinguishers. The following information should be recorded in the fire logbook, which may be in electronic form:

a) information to be completed by the responsible person:

1) the name(s) of the member(s) of the premises management to whom responsibility for the extinguishers is delegated;

2) brief details of maintenance arrangements;

3) dates and types of all visual inspections by the responsible person (see **11.2**) and details of any issues so identified;

b) information to be provided by the competent person for inclusion in the logbook:

1) details of any significant issues;

2) dates and types of maintenance by the competent person along with a note if any corrective actions are required [see **11.1**a)];

3) dates and types of all maintenance (e.g. service visit or non-routine attention).

*NOTE* *This information might be of value to the organization that services the extinguishers.*

# Annex A (normative)
# Commissioning service procedures

Commissioning service procedures (see **5.1**) should be carried out:

a) to ensure that the extinguisher is suitable to cover the hazards which are present within the area it is located (see BS 5306-8);

b) to check that the extinguisher has not been damaged in transit between manufacture and positioning; and

c) to ensure that the extinguisher is free from any deficiencies that would make it potentially dangerous, fail to operate or not work efficiently/effectively.

**WARNING**. There might be safety issues relating to the extinguisher under evaluation.

Account should be taken of information contained within safety/advisory notices and product recalls issued by regulatory/trade bodies and product manufacturers before evaluating fitness for service of an extinguisher.

The commissioning service procedures listed in Table A.1 should be carried out for the appropriate type of extinguisher.

*NOTE Table A.1 shows a numbered sequence of actions necessary to perform a commissioning service on the main types of extinguisher. Each action is composed of one or more operations or inspections. It is not necessary, or possible, to perform every action on every type of extinguisher.*

In Table A.1, the category column headings include the following types of extinguisher:

- **column c**: stored pressure water-based and clean agent, powder, and primary sealed powder;
- **column d**: carbon dioxide;
- **column e**: cartridge operated – water-based and clean agent;
- **column f**: cartridge operated – powder.

**Table A.1** — *Commissioning service procedures*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| | **CAUTION** | ✓ | ✓ | ✓ | ✓ | Specific warnings and safety instructions are given throughout this standard. General warnings/precautions are given in Clause **4**. |
| 1 | Safety and indicating devices | ✓ | ✓ | ✓ | ✓ | Check the safety and indicating devices to determine whether the extinguisher might have been operated.<br>**CAUTION**. Make safe by replacing safety and indicating devices if missing or broken, as necessary. |
| 2 | External examination | ✓ | ✓ | ✓ | ✓ | Clean and examine the exterior for corrosion, dents, gouges or damage that could impair the safe operation and integrity of the extinguisher (see Clause **10**), paying particular attention to any of the following for signs of degradation:<br>• body;<br>• head assembly;<br>• body cover;<br>• body fittings.<br>*NOTE It is necessary to remove any body cover (see **3.3**) and it might also be necessary to remove the extinguisher footstand to enable a full examination of the body.* |
| 3 | Operating instructions | ✓ | ✓ | ✓ | ✓ | Check that there are English operating instructions and that they are correct and legible (see **10.2.3**). |

**Table A.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 4 | Pressure-indicating devices | ✓ | | | | Check pressure-indicating devices, where fitted, using the appropriate equipment. If it is not operating freely or if the indicated pressure is outside the specified limits, refer to the extinguisher manufacturer's instructions to ascertain the appropriate action to be taken. Check that any dust covers needed on pressure-indicating or pressure-relief devices are in place and are of a size that does not obscure the reading of the gauge.<br>Where a pressure-indicating device is not fitted, verify, by means of the connection provided for this purpose, that the internal pressure is correct. If it is not correct, refer to the extinguisher manufacturer's instructions to ascertain the appropriate action to be taken. |
| 5 | Initial mass check<br>a) $CO_2$ extinguishers | | ✓ | | | Weigh the extinguisher after removal of the swivel horn/hose and horn assembly and any blanking plug. Compare this mass with the nominal mass indication stamped on the shoulder of the cylinder. Check that the measured mass is no greater than ±5% of the charge when compared to the declared stamped mass (e.g. no more than ±0.1 kg for a 2 kg contents extinguisher; no more than ±0.25 kg for a 5 kg contents extinguisher). Record the mass on the maintenance label.<br>*NOTE Stamped gross mass is only an indication by the cylinder manufacturer.* |
| | b) All types except $CO_2$ | ✓ | | ✓ | ✓ | Weigh the complete extinguisher including hose assembly attached (unless otherwise instructed by the manufacturer). Compare this mass with the declared nominal mass recorded (given by the manufacturer on the label or in their servicing procedures). Check that the measured mass is no greater than ±5% of the charge when compared to the nominal mass (e.g. no more than ±0.05 kg for a 1 kg contents extinguisher; no more than ±0.3 kg for a 6 l contents extinguisher; no more than ±0.45 kg for a 9 kg contents extinguisher, etc.).<br>Record the measured mass on the maintenance label. |

**Table A.1** *(continued)*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 6 | Opening a gas cartridge extinguisher | | | ✓ | ✓ | Open the extinguisher. Remove the gas cartridge from the head assembly. |
| 7 | Initial fill | | | ✓ | ✓ | Refer to the extinguisher manufacturer's instructions.<br>If empty, examine the interior of the extinguisher with the aid of an inspection light. Check for corrosion or deterioration of the lining. Fill the extinguisher, referring to the manufacturer's instructions.<br>If pre-filled, pour the contents into a clean container and examine the interior of the extinguisher with the aid of an inspection light. Check for corrosion or deterioration of the lining. Return the contents to the extinguisher and verify the charge is within the manufacturer's nominal range.<br>If the extinguisher contains an additive in a separate container, check the container for leakage.<br>If any faults are found return the extinguisher to the manufacturer. |
| 8 | Powder condition | | | | ✓ | Where a cartridge-operated extinguisher has been pre-filled, examine the powder in the extinguisher. If there is any evidence of caking, lumps or foreign bodies, or if the powder is not free flowing, or if there is any doubt at all about the condition of the powder, return the extinguisher to the manufacturer/supplier. |

**Table A.1** *(continued)*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 9 | Operating mechanism and air passages | ✓ | | ✓ | ✓ | a) Clean if necessary and pass air through the hose (where fitted) and nozzle to check they are clear. Do not rectify any fault; return the extinguisher to the manufacturer.<br>Check the operating mechanism and discharge control (where fitted) for free movement. Do not rectify any fault; return the extinguisher to the manufacturer.<br>Protect moving parts and threads against corrosion with a lubricant as recommended by the extinguisher.<br>b) Clean if necessary and pass air through the air passages to check they are clear, including the hose (where fitted), paying particular attention to the vent holes (or other venting device) in the head assembly. Check that the filter (where fitted), internal discharge tube and breather valve (where fitted) are unobstructed. Do not rectify any fault; return the extinguisher to the manufacturer.<br>Check the operating mechanism and discharge control (where fitted) for free movement. Do not rectify any fault; return the extinguisher to the manufacturer.<br>Protect moving parts and threads against corrosion with a lubricant as recommended by the extinguisher manufacturer. |
| 10 | Assembling a $CO_2$ | | ✓ | | | Check the condition of the swivel horn/hose assembly. Pass air through it to check it is clear. Check the O-ring is in place and correctly seated. Fit the discharge horn/hose assembly, ensuring that it is seated correctly in the valve housing. Tighten the retaining nut with the appropriate tool/spanner. For swivel horn type, tighten the retaining nut sufficiently to ensure that the swivel horn can remain in the operating position (i.e. at approximately 45°) without external support. If the retaining nut has a grub screw, fit and tighten it. Reposition the horn down to the vertical ensuring that the retaining nut does not move. For hose and horn type, tighten the retaining nut; then stow the horn in accordance with the manufacturer's instructions. |

**Table A.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 11 | Removable operating mechanism | ✓ | | | | Where the extinguisher is designed to have the operating mechanism removed without the discharge of contents or loss of pressure, remove and check the operating mechanism and discharge control (where fitted) for free movement. Clean and lubricate the operating mechanism. Do not rectify any fault; return the mechanism to the manufacturer/supplier. |
| 12 | Safety pin | ✓ | ✓ | ✓ | ✓ | Break the anti-tamper device (sometimes a manufacturer's transport device) and remove the safety pin, check that it comes out easily. Check that the operating lever is undamaged and its movement is unobstructed.<br>Safety precautions should be taken to avoid inadvertent operation.<br>Refit the safety pin or, where necessary, a replacement pin to the extinguisher and secure it in place with a new anti-tamper device. |
| 13 | Gas cartridge | | | ✓ | ✓ | Check the date marked on the cartridge (see 8.2).<br>Examine the gas cartridge externally for corrosion or damage. Check that the pierce disc has not been pierced. If the gas cartridge has suffered mechanical damage, is corroded or the incorrect type, replace as recommended by the extinguisher supplier; or refer back to the manufacturer/supplier (see also 8.2).<br>Check that the gas cartridge is of the propellant type, content, size and coating appropriate to the extinguishing medium as stated by the extinguisher manufacturer.<br>Weigh the gas cartridge and check the measured mass against the gross mass marked on the gas cartridge. If the gas cartridge is not full, withdraw it from service and replace it with a gas cartridge as recommended by the extinguisher manufacturer. Refit the gas cartridge to the head assembly. |

**Table A.1** *(continued)*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 14 | Reassembly | | | ✓ | ✓ | Reassemble the extinguisher in accordance with the extinguisher manufacturer's instructions.<br>Ensure that all accessible o-seals are clean, undamaged and properly seated.<br>When reassembling the head assembly onto the extinguisher, ensure that the hose outlet is positioned such that the nozzle can be located in/onto the nozzle clip, where fitted.<br>Using the appropriate tool/spanner, tighten the head assembly to ensure that it is tightly affixed and will retain pressure.<br>Replace with new or reset any indicating device designed to show whether the extinguisher might have been operated. |
| 15 | Affix maintenance label | ✓ | ✓ | ✓ | ✓ | Affix the maintenance label to the extinguisher in an appropriate position on the extinguisher body in accordance with 7.1, and complete the details on the maintenance label, as recommended in 7.2. |
| 16 | Mounting bracket/stand | ✓ | ✓ | ✓ | ✓ | Check wall mounting brackets, stands or cabinets for:<br>a) suitability of mounting type for the extinguisher model, weight, size; and the location (including, where applicable, wall construction/condition or floor construction/condition/stability);<br>b) condition and signs of damage, wear or deterioration;<br>c) stability, height, security and integrity of extinguisher mounted in its designated position;<br>d) ease of accessibility and removal for use of the extinguisher.<br>Rectify any faults. |
| 17 | Sign | ✓ | ✓ | ✓ | ✓ | Check any signage is correct for the extinguisher type and rectify if necessary (see BS 5306-8:2012, **6.2**). |
| 18 | Written report | ✓ | ✓ | ✓ | ✓ | Provide a written report advising the responsible person of the state of maintenance of the extinguishers (see 11.1). |

# Annex B (normative)
# Basic service procedures

Basic service procedures (see **6.2**) should be carried out:

a) to ensure that the extinguisher is or continues to be suitable to cover the hazards which are present within the area in which it is located (see BS 5306-8);

b) to check that the extinguisher has not been tampered with or damaged since the last service procedure;

c) to check that local environmental factors have not caused deterioration of the extinguisher; and

d) to ensure that the extinguisher is free from any deficiencies that would leave it potentially dangerous, fail to operate or not work efficiently/effectively.

**WARNING**. There might be safety issues relating to the extinguisher under evaluation.

Account should be taken of information contained within safety/advisory notices and product recalls issued by regulatory/trade bodies and product manufacturers before evaluating fitness for service of an extinguisher.

The basic service procedures listed in Table B.1 should be carried out for the appropriate type of extinguisher.

*NOTE 1 Table B.1 shows a numbered sequence of actions necessary to perform a basic service on the main types of extinguisher. Each action is composed of one or more operations or inspections. It is not necessary, or possible, to perform every action on every type of extinguisher.*

*NOTE 2 It is considered to be good environmental practice to carry out the service procedures on the extinguisher rather than replace it.*

In Table B.1, the category column headings include the following types of extinguisher:

- **column c**: stored pressure –water-based and clean agent, powder, and primary sealed powder;
- **column d**: carbon dioxide;
- **column e**: cartridge operated – water-based and clean agent;
- **column f**: cartridge operated – powder.

**Table B.1** — *Basic service procedures*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| | **CAUTION** | ✓ | ✓ | ✓ | ✓ | Specific warnings and safety instructions are given throughout this standard. General warnings/precautions are given in Clause **4**. |
| 1 | Safety and indicating devices | ✓ | ✓ | ✓ | ✓ | Check the safety and indicating devices to determine whether the extinguisher might have been operated.<br>**CAUTION**. Make safe by replacing safety and indicating devices if missing or broken, as necessary. |
| 2 | External examination | ✓ | ✓ | ✓ | ✓ | Clean and examine the exterior for corrosion, dents, gouges or damage that could impair the safe operation and integrity of the extinguisher (see Clause **10**), paying particular attention to any of the following for signs of degradation:<br>• body;<br>• head assembly;<br>• body cover;<br>• body fittings.<br>*NOTE It is necessary to remove any body cover (see **3.3**) and it might also be necessary to remove the extinguisher footstand to enable a full examination of the body.* |
| 3 | Operating instructions | ✓ | ✓ | ✓ | ✓ | Check that there are English operating instructions and that they are correct and legible. Check the operating instructions for damage or wear which would affect the legibility (see **10.2.3**). |

**Table B.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 4 | Pressure-indicating devices | ✓ | | | | Check pressure-indicating devices, where fitted, using the appropriate equipment. If it is not operating freely or if the indicated pressure is outside the specified limits, refer to the extinguisher manufacturer's instructions to ascertain the appropriate action to be taken. Check that any dust covers needed on pressure-indicating or pressure-relief devices are in place and are of a size that does not obscure the reading of the gauge.<br>Where a pressure-indicating device is not fitted, verify, by means of the connection provided for this purpose, that the internal pressure is correct. If it is not correct, refer to the extinguisher manufacturer's instructions to ascertain the appropriate action to be taken. |
| 5 | Mass check<br>a) $CO_2$ extinguishers | | ✓ | | | Weigh the extinguisher after removal of the swivel horn/hose and horn assembly. Compare this mass with the measured mass recorded on the maintenance label during commissioning. Check that the measured mass has lost no greater than 10% of the charge mass when compared to the commissioning mass (e.g. no more than −0.2 kg for a 2 kg contents extinguisher; no more than −0.5 kg for a 5 kg contents extinguisher). Record the mass on the maintenance label.<br>*NOTE Stamped gross mass is only an indication by the cylinder manufacturer.* |
| | b) All types except $CO_2$ | ✓ | | ✓ | ✓ | Weigh the complete extinguisher including hose assembly attached (unless otherwise instructed by the manufacturer). Compare this mass with the measured mass recorded on the maintenance label during commissioning. Check that the measured mass is no greater than 10% of the nominal charge when compared with the commissioning mass, the mass after extended service or the mass after recharging, whichever is the latest (e.g. no more than −0.1 kg for a 1 kg contents extinguisher; no more than −0.6 kg for a 6 l contents extinguisher; no more than −0.9 kg for a 9 kg contents extinguisher).<br>Record the measured mass on the maintenance label. |

**Table B.1** *(continued)*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 6 | Opening a gas cartridge extinguisher | | | ✓ | ✓ | Open the extinguisher. Remove the gas cartridge from the head assembly. |
| 7 | Water-based charges | | | ✓ | | Pour the original charge into a clean container (in most cases it should be possible to be reused), check it and verify that the charge is within the manufacturer's nominal range.<br>With the exception of water extinguishers, the charge should not be topped up.<br>If any additive container has leaked, discard the container and the contaminated charge.<br>Recharge the extinguisher. |
| 8 | Powder charges<br>a) Cartridge | | | | ✓ | Examine the powder. Agitate the powder by inverting and shaking the extinguisher, taking care to avoid spillage. If there is any evidence of caking, lumps, or foreign bodies, or if the powder is not free flowing, or if there is any doubt at all about the condition of the powder, discard all the powder and recharge in accordance with Annex D. The use of sieves or machines to remove foreign bodies or caked or lumpy material is not recommended since this involves considerable exposure of the powder to atmospheric humidity with a risk of subsequent caking. |
| | b) Stored pressure | ✓ | | | | Agitate the powder by inverting and shaking the extinguisher. If there is any evidence of caking, lumps, or foreign bodies, or if the powder is not free flowing (by listening for or feeling free movement), or if there is any doubt at all about the condition of the powder, discard all the powder and recharge in accordance with Annex D. |

**Table B.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 9 | Operating mechanism and air passages | | | ✓ | ✓ | Remove the safety pin. Clean if necessary and pass air through the air passages, paying particular attention to the vent holes (or other venting device) in the head assembly. Check that the filter (where fitted), internal discharge tube and breather valve (where fitted) are unobstructed. Rectify any problems or replace with a new discharge tube or valve if necessary. Renew the gas-band, where fitted.<br>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. Reinstall the safety pin. |
| 10 | Removable operating mechanism | ✓ | | | | Carry out this procedure where the extinguisher is designed to have the operating mechanism removed without the discharge of contents or loss of pressure.<br>**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, ensure the safety pin is in place, then it should be taken out of service and returned for refilling. Under no circumstances attempt to remove the head and hose assembly of a pressurized extinguisher.<br>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.<br>Reassemble and refit any removable operating mechanism.<br>Refit the safety pin. |

**Table B.1** *(continued)*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 11 | Gas cartridge | | | ✓ | ✓ | Check the date marked on the cartridge (see 8.2).<br>Examine the gas cartridge externally for corrosion or damage. Check that the pierce disc has not been pierced. If the gas cartridge has suffered mechanical damage, is corroded or the incorrect type, replace as recommended by the extinguisher supplier; or refer back to the manufacturer/supplier (see also 8.2).<br>Check the gas cartridge is of the propellant type, content, size and coating appropriate to the extinguishing medium as stated by the extinguisher manufacturer.<br>Weigh the gas cartridge and check the measured mass against the gross mass marked on the gas cartridge. If the gas cartridge is not full, withdraw it from service and replace it with a gas cartridge as recommended by the extinguisher manufacturer. |
| 12 | Seals for the discharge horn, hose, nozzle, valve body and hose diaphragm | ✓ | ✓ | ✓ | ✓ | The seals for the discharge horn/hose assembly, the hose, the nozzle and the valve body should be replaced with new seals whenever these components are removed from the extinguisher. If the hose is fitted with a diaphragm, this should be replaced with a new diaphragm. |
| 13 | Discharge nozzle, horn and hose assembly | ✓ | ✓ | ✓ | ✓ | Check the condition and fitness for use of the discharge nozzle, horn and hose assembly, and ensure that the nozzle, horn and hose, if fitted, are not obstructed, cracked, worn, or damaged. If necessary, replace with a new nozzle, horn and/or hose in accordance with the manufacturer's recommendations.<br>Refit the discharge horn/hose assembly, ensuring that it is seated correctly in the valve housing. Tighten the retaining nut with the appropriate tool/spanner. For swivel horn type, tighten the 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 retaining nut has a grub screw, refit it). For hose and horn type, tighten the retaining nut; then stow the horn in accordance with the manufacturer's instructions. |

**Table B.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 14 | Body | | | ✓ | | Examine the interior with the aid of an inspection light. Check for corrosion, especially around the thread or neck.<br>Where fitted, check for evidence of corrosion under the lining, lining splits, bubbles, loss of adhesion (particularly around the thread neck) or general deterioration of lining. |
| 15 | Charges | | | ✓ | | Return the original charge to the extinguisher, or replace with new charge according to the instructions of the extinguisher manufacturer. |
| 16 | Reassembly | | | ✓ | ✓ | Reassemble the extinguisher in accordance with the extinguisher manufacturer's instructions.<br>Ensure that all renewed o-seals are clean and properly seated.<br>When reassembling the head 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.<br>Using the appropriate tool/spanner, tighten the head assembly to ensure that it is tightly affixed and will retain pressure.<br>Replace with new or reset any indicating device designed to show whether the extinguisher might have been operated. |
| 17 | Safety pin | ✓ | ✓ | | | Remove the safety pin and check that the operating lever is undamaged and its movement is unobstructed. Safety precautions should be taken to avoid inadvertent operation. Return the safety pin or, where necessary, a replacement pin to the extinguisher. |
| 18 | Maintenance label | ✓ | ✓ | ✓ | ✓ | Complete the details on the maintenance label as in 7.2. |

**Table B.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 19 | Mounting bracket/ stand | ✓ | ✓ | ✓ | ✓ | Check wall mounting brackets, stands or cabinets for:<br>a) suitability of mounting type for the extinguisher model, weight, size; and the location (including, where applicable, wall construction/condition or floor construction/condition/stability);<br>b) condition and signs of damage, wear or deterioration;<br>c) stability, height, security and integrity of extinguisher mounted in its designated position;<br>d) ease of accessibility and removal for use of the extinguisher.<br>Rectify any faults. |
| 20 | Report | ✓ | ✓ | ✓ | ✓ | Provide a written report advising the responsible person of the state of maintenance of the extinguishers (see 11.1). |

# Annex C (normative)
# Extended service procedures

Extended service procedures (see **6.3**) should be carried out:

a) to ensure that the extinguisher is or continues to be suitable to cover the hazards which are present within the area it is located (see BS 5306-8);

b) to ensure that the extinguisher will work when operated;

c) to change extinguishing media which has a finite life span to maintain fire ratings;

d) to check the actuating mechanism will function correctly; and

e) to enable internal inspection of stored pressure extinguishers.

**WARNING**. There might be safety issues relating to the extinguisher under evaluation.

Account should be taken of information contained within safety/advisory notices and product recalls issued by regulatory/trade bodies and product manufacturers before evaluating fitness for service of an extinguisher.

The extended service procedures listed in Table C.1 should be carried out for the appropriate type of extinguisher.

*NOTE 1 Table C.1 shows a numbered sequence of actions necessary to perform an extended service on the main types of extinguisher. Each action is composed of one or more operations or inspections. It is not necessary, or possible, to perform every action on every type of extinguisher.*

*NOTE 2 It is considered to be good environmental practice to carry out the service procedures on the extinguisher rather than replace it.*

*NOTE 3 Trade effluent is deemed to be all waste that is not "domestic production", so extinguisher discharges thus fall into this category. Site owners are expected to hold a "discharge consent" from their local water undertaking for declared discharges. The disposal of trade effluent into the foul sewage system on a customer's site is expected to be covered under their permissions and consent. The site owner and the water undertaking can be consulted where there is any doubt.*

In Table C.1, the category column headings include the following types of extinguisher:

- **column c**: stored pressure – water-based and clean agent, powder, and primary sealed powder;
- **column d**: carbon dioxide;
- **column e**: cartridge operated – water-based and clean agent;
- **column f**: cartridge operated – powder.

**Table C.1** — *Extended service procedures*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| | **CAUTION** | ✓ | | ✓ | ✓ | Specific warnings and safety instructions are given throughout this standard. General warnings/precautions are given in Clause **4**. |
| 1 | Safety and indicating devices | ✓ | | ✓ | ✓ | Check the safety and indicating devices to determine whether the extinguisher might have been operated.<br>**CAUTION**. Make safe by replacing safety and indicating devices if missing or broken, as necessary. |
| 2 | External examination | ✓ | | ✓ | ✓ | Clean and examine the exterior for corrosion, dents, gouges or damage that could impair the safe operation and integrity of the extinguisher (see Clause **10**), paying particular attention to any of the following for signs of degradation:<br>• body;<br>• head assembly;<br>• body cover;<br>• fittings.<br>*NOTE It is necessary to remove any body cover (see **3.3**) and it might also be necessary to remove the extinguisher footstand to enable a full examination of the body.* |
| 3 | Operating instructions | ✓ | | ✓ | ✓ | Check the operating instructions for damage or wear which would affect the legibility and that they are in English (see **10.2.3**). |
| 4 | Pressure-indicating devices | ✓ | | | | Check pressure-indicating devices, where fitted. If it is not operating freely or if the indicated pressure is outside the specified limits, refer to the extinguisher manufacturer's instructions to ascertain the appropriate action to be taken. Check that any dust covers needed on pressure-indicating or pressure-relief devices are in place and are of a size that does not obscure the reading of the gauge.<br>Where a pressure-indicating device is not fitted, verify, by means of the connection provided for this purpose, that the internal pressure is correct. If it is not correct, refer to the extinguisher manufacturer's instructions to ascertain the appropriate action to be taken. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 5 | Mass check | ✓ | | ✓ | ✓ | Weigh the complete extinguisher. Compare this mass with the mass recorded on the service label during commissioning. A loss of up to 10% of the measured mass is allowed from the commissioned mass. |
| 6 | Removable operating mechanism<br>a) Gas cartridge strike knob | | | ✓ | | Carry out this procedure where the extinguisher is designed to have the operating mechanism removed without the discharge of contents or loss of pressure.<br>**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, 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 18.<br>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.<br>Reassemble and refit any removable operating mechanism.<br>Refit the safety pin. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| | b) 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.<br>**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, 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 19. Under no circumstances attempt to remove the head and hose assembly of a pressurized extinguisher.<br>Where the head and hose assembly 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.<br>Reassemble and refit any removable operating mechanism.<br>Refit the safety pin. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 7 | Opening a gas cartridge extinguisher | | | ✓ | ✓ | Extreme caution should be used when opening any extinguisher.<br>Care should be taken to ensure that any residual pressure is released, and that a pressurized extinguisher is not opened.<br>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.<br>Once all residual pressure has been released, completely unscrew the head assembly.<br>Remove the head assembly.<br>Remove the gas cartridge. |
| 8 | Plastics head assembly | | | ✓ | ✓ | If the extinguisher was fitted with a plastics head assembly, remove and discard in an environmentally friendly manner.<br>Replace with a new plastics head assembly. |
| 9 | Gas cartridge | | | ✓ | ✓ | Examine the gas cartridge externally for corrosion or damage. Check that the gas cartridge is of the propellant type, content, size and coating appropriate to the extinguishing medium as stated by the extinguisher manufacturer.<br>If the gas cartridge has suffered mechanical damage, is corroded or the incorrect type, replace as recommended by the extinguisher supplier (see also 8.2).<br>Check that the pierce disc has not been pierced.<br>Weigh the gas cartridge and check the measured mass against the gross mass marked on the gas cartridge. If the gas cartridge is not full, withdraw it from service and replace it with a gas cartridge as recommended by the extinguisher manufacturer. Check the date marked on the cartridge (see 8.2). |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 10 | Water-based charges | | | ✓ | | Pour the original charge into a clean container and, if it is to be reused, check it in accordance with the extinguisher manufacturer's instructions. If the additive container has been leaking, discard the container and charge. |
| 11 | Powder charges | | | | ✓ | Examine the powder. Agitate the powder by inverting and shaking the extinguisher, taking care to avoid spillage. If there is any evidence of caking, lumps, or foreign bodies, or if the powder is not free flowing, or if there is any doubt at all about the condition of the powder, discard all the powder and recharge in accordance with Annex D. The use of sieves or machines to remove foreign bodies or caked or lumpy material is not recommended since this involves considerable exposure of the powder to atmospheric humidity with a risk of subsequent caking. |
| 12 | Operating mechanism and air passages | | | ✓ | ✓ | Remove the safety pin. Clean if necessary and pass air through the air passages, paying particular attention to the vent holes (or other venting device) in the head assembly. Check that the filter (where fitted), internal discharge tube and breather valve (where fitted) are unobstructed. Rectify any problems or replace with a new discharge tube or valve if necessary. Renew the gas-band, where fitted.<br>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.<br>Return the safety pin or, where necessary, a replacement pin to the extinguisher. |
| 13 | Safety pin | ✓ | | | | Remove the safety pin and check that the operating lever is undamaged and its movement is unobstructed. Safety precautions should be taken to avoid inadvertent operation. Return the safety pin or, where necessary, a replacement pin to the extinguisher. |
| 14 | Gas cartridge | | | ✓ | ✓ | Replace the gas cartridge. Safety precautions should be taken to avoid inadvertent operation. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 15 | Seals for the hose, nozzle, valve body and hose diaphragm | ✓ | | ✓ | ✓ | The seals for the hose, the nozzle and the valve body should be replaced with new seals whenever these components are removed from the extinguisher. If the hose is fitted with a diaphragm, this should always be replaced with a new diaphragm.<br>Check the condition and fitness for use of the discharge nozzle and ensure that the nozzle, if fitted, is not obstructed, cracked, worn, or damaged. If necessary, replace with a new nozzle in accordance with the manufacturer's recommendations. |
| 16 | Body | | | ✓ | ✓ | Examine the interior with the aid of an inspection light. Check for corrosion, especially around the thread or neck.<br>Where there is a lining, check for evidence of corrosion under the lining, lining splits, bubbles, loss of adhesion (particularly around the thread neck) or general deterioration of the lining. |
| 17 | Charges | | | ✓ | | Return the original charge to the extinguisher. |
| 18 | Discharge of contents | ✓ | | ✓ | ✓ | Ensure that all assemblies and components checked for safety use are reassembled or replaced prior to discharge.<br>The impact of the discharge of the extinguishing medium on the environment should be taken into account before discharging the extinguisher contents.<br>Discharge the extinguisher in an environmentally acceptable manner. |
| 19 | 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. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 20 | Opening a discharged extinguisher | ✓ | | ✓ | ✓ | Extreme caution should be used when opening any extinguisher.<br>Care should be taken to ensure that all residual pressure has been released, and that a pressurized extinguisher is not opened.<br>Using the appropriate 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.<br>Once all residual pressure has been released, completely unscrew and remove the head assembly. |
| 21 | Discharged gas cartridge | | | ✓ | ✓ | Remove and discard the gas cartridge in an environmentally acceptable manner. |
| 22 | Water-based charges | ✓ | | ✓ | | Rinse out the body of the extinguisher with clean water and discard water. |
| 23 | Powder charges | ✓ | | | ✓ | Empty out any residual powder and discard in an environmentally acceptable manner prior to refilling. |
| 24 | Body | ✓ | | ✓ | ✓ | Examine the interior with the aid of an inspection light. Check for corrosion, especially around the thread or neck.<br>Where there is a lining, check for evidence of corrosion under the lining, lining splits, bubbles, loss of adhesion (particularly around the thread neck) or general deterioration of the lining. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 25 | Refilling<br>a) water-based charges | ✓ | | ✓ | | Refill the extinguisher in accordance with either:<br>• the extinguisher manufacturer's instructions; or<br>• the medium supplier's instructions.<br>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.<br>**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. |
| | b) Powder charges | ✓ | | | ✓ | Refill the extinguisher in accordance with either:<br>• the extinguisher manufacturer's instructions; or<br>• the medium supplier's instructions.<br>Particular attention should be paid to the medium type (e.g. ABC, BC), active ingredient (e.g. ABC30, ABC70), brand/manufacturer and quantity.<br>The use of sieves or machines to remove foreign bodies or caked or lumpy material is not recommended. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 26 | 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 head assembly. Check that the filter (where fitted), internal discharge tube and breather valve (where fitted) are unobstructed. Rectify any problems or replace with a new discharge tube or valve if necessary. Renew the gas-band, where fitted.<br>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.<br>Return the safety pin or, where necessary, a replacement pin to the extinguisher. |
| 27 | Replacement gas cartridge | | | ✓ | ✓ | Replace with a full gas cartridge of the propellant type, content, size and coating appropriate to the extinguishing medium as stated by the extinguisher manufacturer. Weigh the gas cartridge, check the measured mass against the gross mass marked on the gas cartridge and ensure it is full. Fit the gas cartridge into the head assembly. |
| 28 | Reassembly | ✓ | | ✓ | ✓ | Reassemble the extinguisher in accordance with the extinguisher manufacturer's instructions.<br>Ensure that all renewed o-seals are clean and properly seated.<br>When reassembling the head 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.<br>Using the appropriate tool/spanner, tighten the head assembly to ensure that it is tightly affixed and will retain pressure.<br>Replace with new or reset any indicating device designed to show whether the extinguisher might have been operated. |

**Table C.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | D<br>Carbon dioxide | e<br>Cartridge operated – water-based, clean agent | f<br>Cartridge operated – powder | g<br>Procedure |
|---|---|---|---|---|---|---|
| 29 | Re-pressurization | ✓ | | | | Re-pressurize the extinguisher in accordance with the extinguisher manufacturer's instructions.<br>When the extinguisher is fully pressurized, the pressure indicating device should be within the specified limits. Fit any dust covers needed, ensuring that they are of a size that does not obscure the pressure indication.<br>Where a pressure indicating device is not fitted, verify, by means of the connection provided for this purpose, that the internal pressure is correct. |
| 30 | Mass/weight check | ✓ | | ✓ | ✓ | Weigh the extinguisher according to the extinguisher manufacturer's instructions. Record this on the maintenance label. |
| 31 | Maintenance label | ✓ | | ✓ | ✓ | Complete the details on the maintenance label as in 7.2. |
| 32 | Mounting bracket/ stand | ✓ | | ✓ | ✓ | Check wall mounting brackets, stands or cabinets for:<br>a) suitability of mounting type for the extinguisher model, weight, size; and the location (including, where applicable, wall construction/condition or floor construction/condition/stability);<br>b) condition and signs of damage, wear or deterioration;<br>c) stability, height, security and integrity of extinguisher mounted in its designated position;<br>d) ease of accessibility and removal for use of the extinguisher.<br>Rectify any faults. |
| 33 | Report | ✓ | ✓ | ✓ | ✓ | Provide a written report advising the responsible person of the state of maintenance of the extinguishers (see 11.1). |

# Annex D (normative)
# Recharge service procedures

Recharge service procedures (see **6.4**) should be carried out:

a) to ensure that the extinguisher is or continues to be suitable to cover the hazards which are present within the area it is located (see BS 5306-8);

b) to return an extinguisher that has been used or tampered with to a serviceable condition;

c) to check that local environmental factors have not caused deterioration of the extinguisher; and

d) to ensure that the extinguisher is free from any deficiencies that would leave it potentially dangerous, fail to operate or not work efficiently/effectively.

**WARNING**. There might be safety issues relating to the extinguisher under evaluation.

Account should be taken of information contained within safety/advisory notices and product recalls issued by regulatory/trade bodies and product manufacturers before evaluating fitness for service of an extinguisher.

The recharge service procedures listed in Table D.1 should be carried out for the appropriate type of extinguisher.

*NOTE 1 Table D.1 shows a numbered sequence 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. It is not necessary, or possible, to perform every action on every type of extinguisher.*

*NOTE 2 It is considered to be good environmental practice to carry out the service procedures on the extinguisher rather than replace.*

*NOTE 3 Trade effluent is deemed to be all waste that is not "domestic production", so extinguisher discharges thus fall into this category. Site owners are expected to hold a "discharge consent" from their local water undertaking for declared discharges. The disposal of trade effluent into the foul sewage system on a customer's site is expected to be covered under their permissions and consent. The site owner and the water undertaking can be consulted where there is any doubt.*

**Table D.1** — *Recharge service procedures*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated | f<br>Cartridge operated | g<br>Procedure |
|---|---|---|---|---|---|---|
| | **CAUTION** | ✓ | ✓ | ✓ | ✓ | Specific warnings and safety instructions are given throughout this standard. General warnings/precautions are given in Clause **4**. |
| 1 | Safety and indicating devices | ✓ | ✓ | ✓ | ✓ | Check the safety and indicating devices to determine whether the extinguisher might have been operated.<br>**CAUTION**. Make safe by replacing safety and indicating devices if missing or broken, as necessary. |
| 2 | External examination | ✓ | ✓ | ✓ | ✓ | Clean and examine the exterior for corrosion, dents, gouges or damage that could impair the safe operation and integrity of the extinguisher (see Clause **10**), paying particular attention to any of the following for signs of degradation:<br>• body;<br>• head assembly;<br>• body cover;<br>• fittings.<br>*NOTE It is necessary to remove any body cover (see **3.3**) and it might also be necessary to remove the extinguisher footstand to enable a full examination of the body.* |
| 3 | Operating instructions | ✓ | ✓ | ✓ | ✓ | Check the operating instructions for damage or wear which would affect the legibility and that they are in English (see **10.2.3**). |
| 4 | Removable operating mechanism | | | | | |

**Table D.1** *(continued)*

| a<br>Action no. | b<br>Component and/or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated | f<br>Cartridge operated | g<br>Procedure |
|---|---|---|---|---|---|---|
| | a) Gas cartridge strike knob | | | ✓ | | Carry out this procedure where the extinguisher is designed to have the operating mechanism removed without the discharge of contents or loss of pressure.<br>**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, 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 6.<br>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.<br>Reassemble and refit any removable operating mechanism.<br>Refit the safety pin. |
| | b) 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.<br>**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, 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 6. Under no circumstances attempt to remove the head and hose assembly of a pressurized extinguisher.<br>Where the head and hose assembly 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.<br>Reassemble and refit any removable operating mechanism.<br>Refit the safety pin. |

**Table D.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated | f<br>Cartridge operated | g<br>Procedure |
|---|---|---|---|---|---|---|
| 5 | Safety pin | ✓ | ✓ | ✓ | ✓ | Remove the safety pin and check that the operating lever is undamaged and its movement is unobstructed. |
| 6 | Discharge of contents: water-based charges, powder | ✓ | | ✓ | ✓ | Ensure that all assemblies and components checked for safety use are reassembled or replaced prior to discharge.<br>The impact of the discharge of the extinguishing medium on the environment should be taken into account before discharging the extinguisher contents.<br>Discharge the extinguisher in an environmentally acceptable manner. |
| 7 | Discharge of contents: carbon dioxide | | ✓ | | | Ensure that all assemblies and components checked for safety use are reassembled or replaced prior to discharge.<br>The impact of the discharge of the extinguishing medium on the environment should be taken into account before discharging the extinguisher contents.<br>**WARNING**. Because of the high vapour pressure of carbon dioxide; actuation of an extinguisher without a discharge horn/hose assembly fitted is extremely hazardous. Always ensure that the discharge horn/hose assembly is fitted correctly on reassembly and before discharge. Do not discharge in a confined area.<br>Discharge the extinguisher in an environmentally acceptable manner. |
| 8 | 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. |
| 9 | Opening a discharged extinguisher | ✓ | | ✓ | ✓ | Extreme caution should be used when opening any extinguisher.<br>Care should be taken to ensure that all residual pressure has been released, and that a pressurized extinguisher is not opened.<br>Using the appropriate 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.<br>Once all residual pressure has been released, completely unscrew and remove the head assembly. |

**Table D.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated | f<br>Cartridge operated | g<br>Procedure |
|---|---|---|---|---|---|---|
| 10 | Discharged gas cartridge | | | ✓ | ✓ | Remove and discard the gas cartridge in an environmentally acceptable manner. |
| 11 | Water-based charges | ✓ | | ✓ | | Rinse out the body of the extinguisher with clean water and discard water. |
| 12 | Powder charges | ✓ | | | ✓ | Empty out any residual powder and discard in an environmentally acceptable manner prior to refilling. |
| 13 | Body | ✓ | | ✓ | ✓ | Examine the interior with the aid of an inspection light. Check for corrosion, especially around the thread or neck.<br>Where fitted, check for evidence of corrosion under the lining, lining splits, bubbles, loss of adhesion (particularly around the thread neck) or general deterioration of lining. |
| 14 | Refilling<br>a) Water-based charges | ✓ | | ✓ | | Refill the extinguisher in accordance with either:<br>• the extinguisher manufacturer's instructions; or<br>• the medium supplier's instructions.<br>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.<br>**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. |

**Table D.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated | f<br>Cartridge operated | g<br>Procedure |
|---|---|---|---|---|---|---|
| | b) Powder charges | ✓ | | | ✓ | Refill the extinguisher in accordance with either:<br>• the extinguisher manufacturer's instructions; or<br>• the medium supplier's instructions.<br>Particular attention should be paid to the medium type (e.g. ABC, BC), active ingredient (e.g. ABC30, ABC70), brand/manufacturer and quantity.<br>The use of sieves or machines to remove foreign bodies or caked or lumpy material is not recommended. |
| 15 | 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 head assembly. Check that the filter (where fitted), internal discharge tube and breather valve (where fitted) are unobstructed. Rectify any problems or replace with a new discharge tube or valve if necessary. Renew the gas-band, where fitted.<br>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.<br>Return the safety pin or, where necessary, a replacement pin to the extinguisher. Replace with new or reset any indicating device designed to show whether the extinguisher might have been operated. |
| 16 | Seals for the discharge horn, hose, nozzle, valve body and hose diaphragm | ✓ | ✓ | ✓ | ✓ | The seals for the hose, the nozzle and the valve body should be replaced with new seals whenever these components are removed from the extinguisher. If the hose is fitted with a diaphragm, this should always be replaced with a new diaphragm.<br>Check the condition and fitness for use of the discharge nozzle and ensure that the nozzle, if fitted, is not obstructed, cracked, worn, or damaged. If necessary, replace with a new nozzle in accordance with the manufacturer's recommendations. |

**Table D.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated | f<br>Cartridge operated | g<br>Procedure |
|---|---|---|---|---|---|---|
| 17 | Gas cartridge | | | ✓ | ✓ | Replace with a full gas cartridge of the propellant type, content, size and coating appropriate to the extinguishing medium as stated by the extinguisher manufacturer. Weigh the gas cartridge, check the measured mass against the gross mass marked on the gas cartridge and ensure that it is full. Fit the gas cartridge into the head assembly. |
| 18 | Reassembly | ✓ | ✓ | ✓ | ✓ | Reassemble the extinguisher in accordance with the extinguisher manufacturer's instructions.<br>Ensure that all renewed o-seals are clean and properly seated.<br>When reassembling the head 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.<br>Using the appropriate tool/spanner, tighten the head assembly to ensure that it is tightly affixed and will retain pressure. |
| 19 | Re-pressurization | ✓ | | | | Re-pressurize the extinguisher in accordance with the extinguisher manufacturer's instructions.<br>When the extinguisher is fully pressurized, the pressure indicating device should be within the specified limits. Fit any dust covers needed, ensuring that they are of a size that does not obscure the pressure indication.<br>Where a pressure indicating device is not fitted, verify, by means of the connection provided for this purpose, that the internal pressure is correct. |
| 20 | Refilling: 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.<br>Refill the extinguisher in accordance with the manufacturer's instructions.<br>Carbon dioxide used to refill extinguishers should conform to BS EN ISO 5923. |
| 21 | Mass check | ✓ | ✓ | ✓ | ✓ | Weigh the extinguisher according to the extinguisher manufacturer's instructions (in the case of a carbon dioxide extinguisher, weigh before reassembly of the discharge horn/hose assembly). Record this on the maintenance label. |

**Table D.1** *(continued)*

| a<br>Action no. | b<br>Component and/ or action | c<br>Stored pressure | d<br>Carbon dioxide | e<br>Cartridge operated | f<br>Cartridge operated | g<br>Procedure |
|---|---|---|---|---|---|---|
| 22 | Reassembling a carbon dioxide extinguisher | | ✓ | | | Reassemble the extinguisher in accordance with the extinguisher manufacturer's instructions.<br>Ensure that all renewed o-seals are clean and properly seated.<br>Refit the discharge horn/hose assembly, ensuring that it is seated correctly in the valve housing. Tighten the hexagonal retaining nut with the appropriate tool/ spanner.<br>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. |
| 23 | Maintenance label | ✓ | ✓ | ✓ | ✓ | Complete the details on the maintenance label as in 7.2. |
| 24 | Mounting bracket/ stand | ✓ | ✓ | ✓ | ✓ | Check wall mounting brackets, stands or cabinets for:<br>a) suitability of mounting type for the extinguisher model, weight, size; and the location (including, where applicable, wall construction/condition or floor construction/condition/stability);<br>b) condition and signs of damage, wear or deterioration;<br>c) stability, height, security and integrity of extinguisher mounted in its designated position;<br>d) ease of accessibility and removal for use of the extinguisher.<br>Rectify any faults. |
| 25 | Report | ✓ | ✓ | ✓ | ✓ | Provide a written report advising the responsible person of the state of maintenance of the extinguishers (see 11.1). |

# Annex E (normative)
# Overhaul, including periodic inspection and test procedures for $CO_2$, clean agent and halon extinguishers

## E.1 General

Overhaul procedures (see 6.5) should be carried out:

a) to check that the extinguisher is safe to be pressurized in accordance with the relevant legislation/standards; and

b) to ensure that the extinguisher is free from any deficiencies that would leave it potentially dangerous, fail to operate or not work efficiently/effectively.

## E.2 $CO_2$ extinguishers

The maintenance supplier should arrange for the procedures given in BS EN 1802 or BS EN 1968, as appropriate, to be carried out. A new valve should be used when the extinguisher is re-assembled; under no circumstances should the original valve be refitted to the body.

**WARNING**. Refitting the original valve to the body can be hazardous.

*NOTE Requirements for the periodic inspection and testing of $CO_2$ type of portable fire extinguishers are specified in BS EN 1802 and BS EN 1968, depending on the construction of the extinguisher body. This type of extinguisher is covered by the Pressure Systems Safety Regulations 2000 [4]. The maintenance intervals recommended in Table 1 (Clause 6) are expected to be acceptable as representing general good practice for schemes of examination for extinguishers under these Regulations.*

## E.3 Clean agent/halon extinguishers (see Annex F)

The maintenance supplier should arrange for the overhaul to be carried out together with the procedures in Table B.1 and Table C.1.

*NOTE This type of extinguisher is covered by the Pressure Systems Safety Regulations 2000 [4]. The maintenance intervals recommended in Table 1 (Clause 6) are expected to be acceptable as representing general good practice for schemes of examination for extinguishers under these Regulations.*

# Annex F (informative)
# Halon extinguishers

## F.1 Halon legislation

Under the 1987 Montreal Protocol on substances that deplete the ozone layer, the production of halons identified as ozone-depleting compounds was banned. This ban was implemented and enforced in the European Community through EC Regulation No. 3093/94 [14], which prohibited the production of halons, and controls their supply and use. The use of halon 1211 and 1301 was restricted to the "critical uses" listed by Annex VII to EC Regulation No. 3093/94.

Amendments to the Montreal Protocol during the 1990s, along with the increased availability of technologies for replacing ozone-depleting substances, led to the introduction of control measures stricter than those imposed by EC Regulation No. 3093/94 [14]. EC Regulation No. 2037/2000 [12] prohibits the placing on the market and use of halons and of products and equipment containing halons, except for the "critical uses" listed in Annex VII of this Regulation. This was implemented in the United Kingdom by the Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2002 [6] and the Environmental Protection (Controls on Ozone-Depleting Substances) (Northern Ireland) Regulations 2003 [7]. After 31 December 2002, it became an offence to supply halons that have been recovered, recycled or reclaimed in existing extinguishers, and after 31 December 2003 it became an offence to possess a halon extinguisher, unless this is for one of the "critical uses". EC 2037/2000 was revised and replaced by EC 1005/2009 [10] which updated the provisions and restrictions on controlled substances including amendments to the critical uses. The critical use phase-out dates were amended by EC 744/2010 [15].

The Ozone-Depleting Substances (Minimum Qualifications) Regulations 2006 [16] require any person handling equipment containing halons, either for recovery or for the "critical uses", to have completed the approved training course cited in the Regulations and be certificated as having completed that training course.

## F.2 Withdrawal of halon extinguishers from service

Halon extinguishers withdrawn from service are required to be emptied in such a way that the halon is recovered, either for the limited possibility of re-use or for disposal by a non-contaminating method. To this end, they have to be sent to an authorized disposal agent with the facilities and expertise required to recover or destroy the halon.

## F.3 Halon replacement gases

Selected halon alternative agents have superseded halon usage in fixed fire suppression system and portable fire extinguisher applications.

Among the chemical halon alternatives, hydrofluorocarbons (HFCs), which exhibit zero ozone depletion potential, are now in common usage. Owing to their global warming potentials (GWP) these are captured within the Kyoto Protocol. In 2001, as part of the European Climate Change programme (ECCP), the European Commission convened a Fluorinated Gases (F Gases) Working Group to discuss a Europe-wide approach to containing and reducing fluorinated gas emissions. The resulting Regulation (EC Regulation 842/2006 [17]) encompasses the placing on the market for specific gases and applications; the containment, use, recovery, recycling and destruction of these gases; labelling and disposal issues; annual reporting; and the training and certification of relevant personnel. As with halons, the EU Regulations and the UK implementation of them require that only trained and certificated personnel handle equipment containing F gases.

EC 842/2006 was updated by EC Regulation 517/2014 [18] which places addition restrictions and brought in phase down of the use of F gases. The training and certification requirements remain in place.

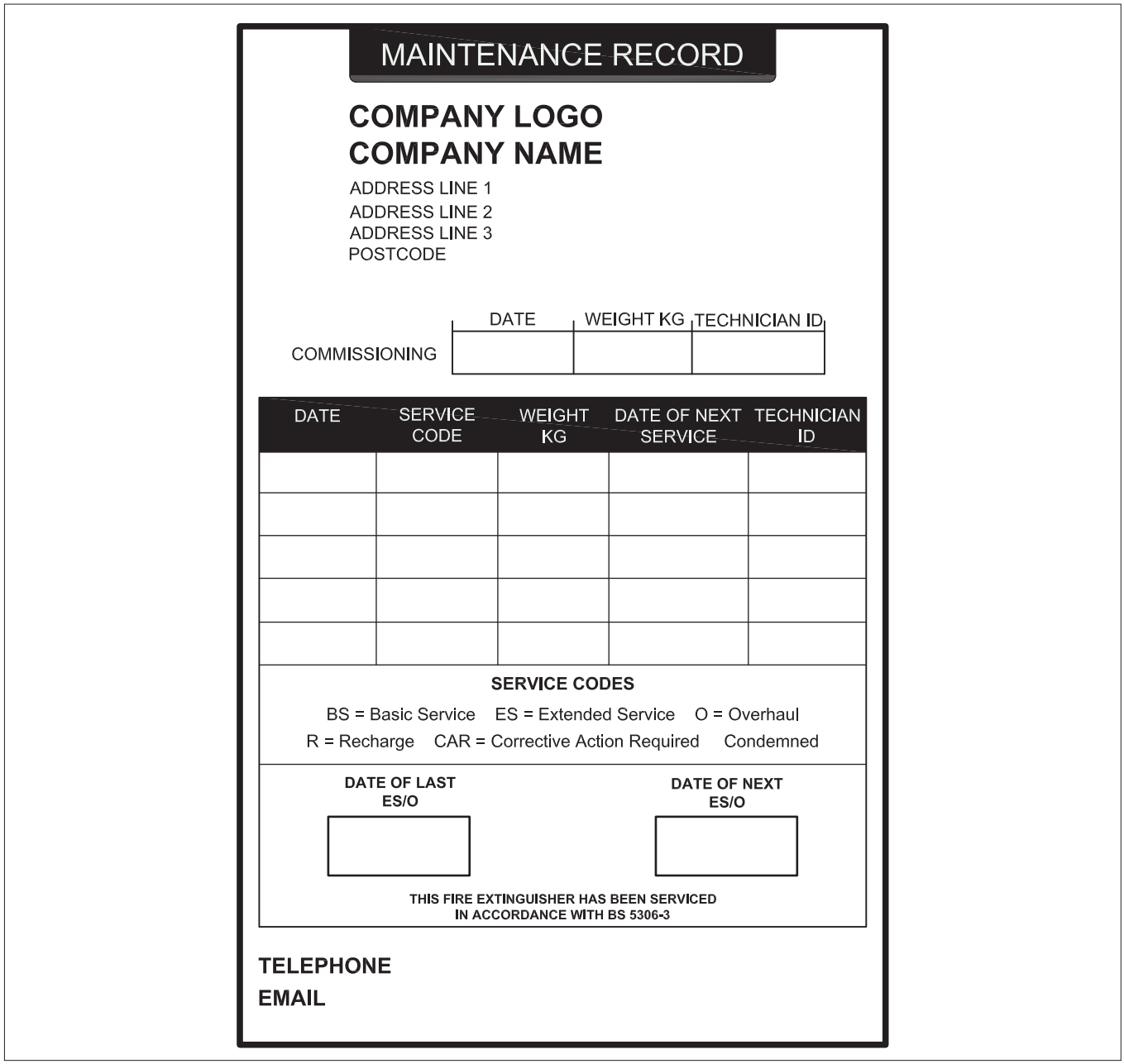
# Annex G (informative)
# Examples of labels

## G.1 Typical maintenance label

Figure G.1 shows an example of a typical maintenance label showing the minimum information which needs to be included.

*NOTE The column headed "Date of next service" need only be included when extinguisher is installed under ADR regulations.*

**Figure G.1** — *Illustration of a typical maintenance label*



### G.2 Typical corrective action label

Figure G.2 shows an example of a typical corrective action label showing the minimum information which needs to be included with a yellow background.

**Figure G.2** — *Illustration of a typical corrective action label*


# Annex H (informative) Extinguishers manufactured in accordance with withdrawn British Standards

Extinguishers conforming to British Standards which were in existence before BS EN 3 was originally published in 1996 might still be found in service. Though these are now more than 20 years old, they might still be accepted as part of the extinguisher provision for the premises provided that they can be returned to a serviceable state; that is, when inspected they do not fall within the categories covered in **10.2.2** and **10.2.3**.

# Annex I (informative)
# Training of competent persons

A competent person is one who has undergone an initial programme of training which includes "on the job" experience and attendance of a training course, followed by the successful completion of an examination administered by an independent examination body[3)].

To maintain competency, ongoing professional development is considered essential and is covered by the provision of refresher training at 3-year intervals together with an examination.

The nature and content of a typical training course is as follows.

**Initial training**

***Criteria***

A person is deemed competent after successful completion of the following:

a) "on the job" experience – the trainee will be under the supervision of a competent person whilst working;

b) attendance of a training course – the trainee will attend for the length of time recommended by the training institution (typically 3 days);

c) examinations – the trainee has to achieve a minimum standard in both theory and practical examinations administered by an independent examination body[3].

***Theory***

Theoretical training on the initial training course is likely to include:

- provisions of BS 5306-3;
- provisions of BS 5306-8;
- provisions of BS 5306-9;
- provisions of BS EN 3-7;
- classes of fire in BS EN 2;
- safety/advisory notices and product recalls issued by regulatory/trade bodies;
- legal requirements relating to the transportation of extinguishers (ADR) [11];
- legal requirements set out in the Pressure Equipment (Safety) Regulations 2016 [13];
- disposal of extinguishing media;
- safe working practices:
  - in workshop;
  - on site;
- health and safety issues affecting a service technician.

***Practical***

The trainee has to undergo practical training establishing their skills in fault-finding in, and servicing according to Annex A, Annex B and Annex C of, a number of different types of extinguisher, including different media.

3 British Approvals for Fire Equipment (BAFE), at the time of publication, recognize the following bodies as providing an examination that can be used in the assessment of competency of extinguisher technicians: British Approvals for Fire Equipment (BAFE): the British Fire Consortium (BFC) and the Independent Fire Engineering and Distributors Association (IFEDA).

**Refresher training**

A competent person is required either to attend a refresher training course of at least 1 day duration, or to undergo refresher training that is structured as continuing professional development over a period that has documented outlines and training material.

The refresher training has to be completed within a period of 3 years of passing either:

a) the initial training course examination; or

b) the last refresher training examination. The competent person after completing the refresher training has to take and pass a written examination.

*NOTE It might not be possible to adhere precisely to a 3-year period, but this is acceptable provided that the refresher training has been officially booked before the 3-year anniversary and the course completed within 6 months of the 3-year anniversary. Failure to follow this procedure entails completing the initial training again.*

***Theory***

Theoretical training on the refresher course is likely to include:

- British Standards;
- commissioning services;
- basic services;
- extended services;
- recharging;
- overhauling;
- new classes of fire;
- safety/advisory notices and product recalls issued by regulatory/trade bodies;
- new products in the market place;
- new requirements;
- practical installation;
- relevant UK statutory regulations including fire legislation.

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