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**BS 5306-0:2020**



**BSI Standards Publication**

## **Fire protection installations and equipment on premises**

Part 0: Guide for selection, use and application of fixed firefighting systems and other types of fire equipment

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### Summary of pages

This document comprises a front cover, and inside front cover, pages i to vi, pages 1 to 75, an inside back cover and a back cover.

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## Foreword

### Publishing information

This part of BS 5306-0 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 August 2020. It was prepared by Technical Committee FSH/18, *Fixed fire fighting systems*. A list of organizations represented on this committee can be obtained on request to the committee manager.

### Supersession

This part of BS 5306 supersedes [BS 5306-0:2011](#), which is withdrawn.

### Relationship with other publications

This part of BS 5306 serves to introduce the subsequent parts of BS 5306 and references other standards as listed below and detailed in the Bibliography, each of which gives requirements or recommendations for the application of a particular type of firefighting system, discharging a particular firefighting medium. Taken together, the various parts of BS 5306 and other British Standards are intended to cover all the main types of firefighting media and systems for buildings in current use, and therefore form a comprehensive guide to all aspects of the subject.

The subsequent parts of BS 5306 are as follows:

- Part 1: *Hose reels and foam inlets*;
- Part 3: *Commissioning and maintenance of portable fire extinguishers – Code of practice*;
- Part 4: *Specification for carbon dioxide systems*;
- Part 5: *Halon systems*<sup>1)</sup>:
  - Section 5.1: *Specification for Halon 1301 total flooding systems*;
  - Section 5.2: *Halon 1211 total flooding systems*;
- Part 8: *Selection and installation of portable fire extinguishers – Code of practice*;
- Part 9: *Recharging of portable fire extinguishers – Code of practice*;
- Part 10: *Colour coding to indicate the extinguishing medium contained in portable fire extinguishers – Code of practice*.

The following parts of BS 5306 have been superseded:

- Part 2: *Specification for sprinkler systems* (superseded by BS EN 12845, *Fixed firefighting systems – Automatic sprinkler systems – Design, installation and maintenance*);
- Part 6: *Foam systems* (superseded by BS EN 13565-2, *Fixed firefighting systems – Foam systems – Part 2: Design, construction and maintenance*):
  - Section 6.1: *Specification for low expansion foam systems*;
  - Section 6.2: *Specification for medium and high expansion foam systems*;
- Part 7: *Specification for powder systems* (superseded by BS EN 12416-2, *Fixed firefighting systems – Powder systems – Part 2: Design, construction and maintenance*).

Other related standards are detailed in [Clause 14](#).

<sup>1)</sup> Systems that can be used as an alternative to halon are covered by the BS EN 15004 series.

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The aim of this part of BS 5306 is to aid selection of the appropriate firefighting medium and type of system or equipment by describing the characteristics and most suitable applications of each.

Consideration has been given to the impact of firefighting media, including toxicity to people, effect of discharge on visibility, and danger of use on electrical equipment, in addition to factors such as monitoring, testing, maintenance and user responsibility.

More detailed consideration of systems and equipment, including safety precautions, is given in the subsequent parts of BS 5306 and other British Standards.

During the preparation of this part of BS 5306 it was suggested by some commentators that the advice in [Table 1](#) appears to be focused on the use of sprinklers as a first priority. The Technical Committee responsible for the preparation of this part of BS 5306 understands this possible perception. However, its intent is not to promote the use of sprinklers to the exclusion of other types of system. It is an undeniable fact that the lengthy international experience of sprinkler systems (since the 1880s) has generated a substantial body of practical experience, effective loss prevention experience, reliability data and knowhow which underpin and offer significant assurance upon the level of performance of the most widely used means of automatic fire suppression. This part of BS 5306 does not advocate that sprinkler systems be specified to the exclusion of other types of systems, rather it recognizes that sprinklers are proven to be suitable and dependable in more applications and occupancies than other types of system. This is reflected in [Table 1](#) and [Table 2](#).

None of the recommendations or guidance in this standard are to be taken as precluding the provision of manual means of fighting fire or as obviating the necessity to notify the fire and rescue service in the event of a fire.

The International System of Units (SI) (see BS EN ISO 80000-1) is followed in this part of BS 5306, except for units of pressure, which are expressed in bar<sup>2)</sup>. Water discharge densities are expressed as rainfall at floor level, in mm/min.

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at [bsigroup.com/standards](https://bsigroup.com/standards), or by contacting the Customer Services team.

Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

### Use of this document

As a guide, this part of BS 5306 takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice.

### Presentational conventions

The guidance in this standard is presented in roman (i.e. upright) type. Any 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").

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<sup>2)</sup> 1 bar = 10<sup>5</sup> N/m<sup>2</sup> = 100 kPa.

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

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## Introduction

There is a wide range of different types of firefighting systems and equipment available that suppress, control and, in some cases, extinguish fire. These systems utilize different firefighting media and, in some cases, apply such media in varying ways to suit different applications. The whole range of media and systems means that virtually all types of fire in a wide range of combustible materials can be tackled reliably and effectively.

The fire suppression industry has developed substantial experience and expertise over many years. With the results obtained from real fires, as well as exhaustive testing of systems and their individual components, a high degree of reliability and effectiveness can be claimed.

This part of BS 5306 is intended to assist those charged with selecting and specifying fixed firefighting systems to determine the most appropriate medium and method of application. This is not the simple process that is sometimes thought. Care is needed to ensure that characteristics of the fire hazard in relation to the building and its contents are properly assessed. This needs to include the nature of the fuel and its configuration, whether the objective is to suppress or extinguish the fire, and the consequences in use in relation to safety of persons, extent of fire damage and scope for secondary damage from the medium itself or by-products of its use.

Design and installation standards are available for all the individual systems and equipment referenced in this part of BS 5306. These standards are primarily aimed at giving recommendations or specifying requirements for the design, installation, operation and maintenance of such systems and equipment. These standards are not concerned with the relative merits of particular systems or equipment, nor do they compare these to other systems which might be available or focus on the limitations of such systems and equipment for any given application. That is the purpose of this part of BS 5306.

This part of BS 5306 is aimed at aiding the selection of the most effective firefighting medium and type of system or equipment by describing the characteristics and most suitable applications of each, as well as identifying limitations or safety aspects which need to be taken into account by stakeholders.

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## Section 1: Preliminaries

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### 1 Scope

This part of BS 5306 gives guidance on the selection, use and application of automatic water sprinkler, water spray, water mist, gaseous, foam, condensed aerosol, wet chemical and powder firefighting systems and oxygen reduction systems. It also gives guidance on installed equipment for fire and rescue service use, and on portable fire extinguishers.

This part of BS 5306 does not cover firefighting systems for the following applications:

- use on ships, in aircraft, on vehicles and mobile fire appliances;
  - use below ground in the mining industry;
  - explosion suppression systems.
- 

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document<sup>3)</sup>. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 4422, *Fire – Vocabulary*<sup>4)</sup>

[BS 5306-1](#), *Code of practice for fire extinguishing installations and equipment on premises – Part 1: Hose reels and foam inlets*<sup>5)</sup>

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

[BS 5306-4](#), *Fire extinguishing installations and equipment on premises – Part 4: Specification for carbon dioxide systems*<sup>6)</sup>

[BS 5306-5](#), *Fire extinguishing installations and equipment on premises – Part 5: Halon systems*

[BS 7273-1](#), *Code of practice for the operation of fire protection measures – Part 1: Electrical actuation of gaseous total flooding extinguishing systems*<sup>7)</sup>

[BS 7273-2](#), *Code of practice for the operation of fire protection measures – Part 2: Mechanical actuation of gaseous total flooding and local application extinguishing systems*

[BS 7273-3](#), *Code of practice for the operation of fire protection measures – Part 3: Electrical actuation of pre-action watermist and sprinkler systems*

[BS 7273-5](#), *Code of practice for the operation of fire protection measures – Part 5: Electrical actuation of watermist systems (except pre-action systems)*

[BS 8458](#), *Fixed fire protection systems – Residential and domestic watermist systems – Code of practice for design and installation*

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<sup>3)</sup> Documents that are referred to solely in an informative manner are listed in the Bibliography.

<sup>4)</sup> This standard also gives informative reference to BS 4422:2005.

<sup>5)</sup> This standard also gives informative reference to BS 5306-1:2006.

<sup>6)</sup> This standard also gives informative reference to BS 5306-4:2001+A1:2012.

<sup>7)</sup> This standard also gives an informative reference to the BS 7273 series.