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To: All NSI Fire Gold and Fire Silver SP203-1 approved companies and applicants

TECHNICAL BULLETIN No: 0070

Revision of BS 5839-1

BS 5839-1:2025 has a publication date of 30th April 2025 and is available through licensed outlets including NSI (please contact accounts@nsi.org.uk) who can supply copies at a discounted rate. It is also available through the NSI Standards on Subscription service.

Implementation timescale for approved and applicant companies

Existing NSI approved companies with Fire Gold or Fire Silver approval to the BAFE SP203-1 scheme will have until 31st October 2025 to transition to BS 5839-1:2025. During the transition period any non-conformances found against the revised standard will be raised as an "Auditor Note". Any non-conformances found after the transition period will be raised as a formal non-conformance report(s) (Major or Minor non-conformance reports).

For applications received prior to 1st June 2025, applicant companies applying for NSI Fire Gold or Fire Silver approval to the BAFE SP203-1 scheme will be subject to the transition arrangements, as detailed above, for existing companies.

For new applicants and existing approved companies seeking an extension to their existing scope to include SP203-1, applications received from 01 June 2025 for approval to the BAFE SP203-1 scheme will be audited against the revised standard and any non-conformances found will be raised as a formal non-conformance report(s) (Major or Minor non-conformance reports).

Note regarding the status of BS 5839-1:2025

Although issued as a code of practice by the British Standards Institution, it is important to note that compliance with the recommendations given in BS 5839-1:2025 is regarded as mandatory for all companies wishing to maintain an NSI approval; subject to any additional clarifications and guidance included within this Technical Bulletin or issued subsequently.

The recommendations given in BS5839-1:2025 must therefore be regarded as requirements in relation to NSI approval for Fire Gold and Fire Silver unless there is documentary evidence to demonstrate the client has accepted and agreed any variations against the recommendations of BS 5839-1:2025.

Summary of the changes

This is not a definitive list of all changes and reference should be made to BS 5839 1:2025 for further information.

Where the actual wording of the standard is quoted, it is reproduced in bold text.

Where it is considered relevant to further clarify the specified requirement, additional guidance is included in italics.

We will consider alternative methods of achieving compliance with specified requirements where these can be demonstrated to be equivalent.

This is a full revision of the standard and includes the significant technical changes listed below.

Section 1: General

Introduction

A new "Introduction" has been included in the revised standard which incorporates the recommendations of BS 5839-1:2017, clause 5.

1 Scope

The wording of the scope of BS 5839-1:2025 has been slightly amended from the 2017 version.

Also, the scope now specifically excludes temporary fire detection and fire alarm systems such as those installed in buildings with hazardous cladding that are awaiting remediation, and construction sites.

2 Normative References

The normative references section has been updated.

3 Terms and Definitions

Some definitions have been added, deleted or amended. The numbering of some definitions has changed due to the inclusion of new definitions.

5 Exchange of information and definition of responsibilities

The new clause 5 - (previously BS 5839-1:2017, clause 6) has introduced the following recommendations:

5.4 If the designer has made a proposal for the category of system (see 4.2), this should be discussed and agreed with the user or purchaser.

5.5 The designer of the system should ascertain from the user or purchaser whether the fire detection and fire alarm system is to incorporate one or more visual alarm devices.

5.6 Before an order is placed for the system, the responsibility for each of the following stages should be clearly defined and documented:

a) system design;

b) installation;

c) commissioning; and

d) handover.

5.7 Before an order is placed for the system, the responsibility for the provision of a zone plan (see 22.2.5) should be clearly defined, agreed and documented.

6 Variations from the recommendations of this document

The new clause 6 - (previously BS 5839-1:2017, clause 7) has introduced the following recommendations:

6.5 All variations should be clearly recorded in the logbook (see Clause 48) so that they are readily available for future reference by maintenance companies and any other interested parties.

6.6 The following departures from the recommendations of this part of BS 5839 are likely to be so detrimental to the safety of life that they should not be regarded as acceptable variations:

a) the absence of a zone plan (or other suitable diagrammatic representation as recommended in 22.2.5) in premises in which there is more than one zone on any storey, particularly premises in which people sleep; or

b) the absence of a facility for transmission of fire alarm signals to an ARC in either:

1) supported housing in which the facility is considered necessary to meet the recommendations of BS 5839-1 (where a Grade A system according to BS 5839-6:2019 is necessary); or

2) a residential care home.

7 Relationship between system category and protected areas

The new clause 7 - (previously BS 5839-1:2017, clause 8) has introduced the following recommendations:

7.2 Where the system comprises more than one objective, and therefore requires more than one category, the system documentation should identify the relationship between protected areas and proposed category.

7.3 The description of the system should include information on the areas of the building that are to be protected for a Category L2, L5 or P2 system.

7.4 Any specification or proposal for a Category L2, L5 or P2 system should clearly identify the rooms or areas that are to be protected by automatic fire detectors.

NOTE 1 There might also be benefit in giving a simple description of the objective of the protection proposed, particularly in submissions to enforcing authorities.

NOTE 2 The standard of protection (extent of coverage) of a Category L5 system might be lower or higher than that afforded by Category L2, L3 or L4 systems.

Clause 7.5 (a) - *(previously BS 5839-1:2017, clause 8.2 (c1)) now recommends that main access and egress stairways are protected by* **"smoke detectors, multi sensor detectors conforming to the fire sensitivity requirements of BS EN 54 7, or a mixture of smoke and combustion gas fire detectors."**

7.6 Multi sensor detectors used in Category L1, L3 and L4 systems (see 7.5) should have the smoke sensor enabled to meet the fire sensitivity requirements of BS EN 54 7.

This is a new clause.

Clause 7.7 - *(previously BS 5839-1:2017, clause 8.2 (d)) includes the recommendation that* **"Where stairways are approached through lobbies, detectors should be installed on the accommodation side of any door that opens onto the lobby."**

7.10 In a Category L1 system in a room in which there is a need for automatic activation to protect the occupants of the room in the event of a fire in that room (e.g. if they are asleep), smoke detectors, combustion gas fire detectors or multi sensor detectors should be provided.

This is a new recommendation, in previous versions of BS 5839-1it was deemed acceptable for bedrooms to be protected by heat detection.

7.12 Where occupants of a building are likely to need assistance from staff to evacuate the building (e.g. in residential care premises and hospitals), the fire detection and fire alarm system should be addressable if the building has facilities for more than 10 people to sleep.

This was previously BS 5839-1:2017, clause 4.2(c).

8 Actuation of other fire protection systems or safety facilities

The new clause 8 - (previously BS 5839-1:2017, clause 9) has introduced the following recommendation:

8.5 For all systems, the fire detection and alarm system interfaces should be located such that they are accessible for maintenance purposes.

NOTE This might preclude the siting of the interface within an enclosure provided for the other equipment, as access might not be possible without the need for attendance by other parties or might involve removing power to the other equipment.

10 System components

The new clause10 - (previously BS 5839-1:2017, clause 11) has been updated to refer to the current product standards.

14 Communication with the fire and rescue service

14.12 If a Category L or Category P system incorporates facilities for automatic transmission of fire alarm signals to an ARC, any telephone switch room or frame room on which automatic transmission depends should be protected by automatic fire detection or an automatic fire extinguishing system. If a Category L or Category P system incorporates facilities for automatic transmission of fire alarm signals to an ARC, the area in which the alarm transmission device is located should be protected by automatic fire detection. As far as reasonably practicable, any cables within the building (including telephone lines and TCP/IP connections) on which communication depends should be:

a) routed through areas of low fire risk; or

b) routed through areas protected by automatic fire detection or an automatic fire extinguishing system; or

c) cables of standard or enhanced fire resistance (see Clause 25).

The new clause 14.12 - (previously BS 5839-1:2017, clause 15.2(j)) has been revised to include the area in which the alarm transmission device is located to be protected by automatic fire detection.

14.17 For Category L systems, in the event of a fire alarm signal, an indication should be received at the ARC within a maximum of 90s; a catastrophic failure of the transmission system (whereby no alarm signals can be transmitted) should be indicated at the ARC and the CIE within 3 min.

This is a new clause.

14.18 For Category P systems, in the event of a fire alarm signal, an indication should be received at the ARC within a maximum of 120s; a catastrophic failure of the transmission system (whereby no alarm signals can be transmitted) should be indicated at the ARC and the CIE within 31 min.

This is a new clause.

14.19 If it is intended for the CIE to signal a fault from the fire detection and fire alarm system to an ARC, the CIE should have a suitably monitored means of interfacing with the relevant fault routing equipment.

NOTE 1 Monitoring may be performed by the fault routing equipment. For example, the connection between the CIE and the fault routing equipment may comprise a cable from an input in the fault routing equipment to the common fault relay in the CIE, such that an open circuit fault in the cable results in transmission of a fault signal to the ARC.

NOTE 2 It is common for the alarm routing equipment and the fault routing equipment to comprise a single device.

This is a new clause.

14.20 Faults in either the alarm transmission equipment or in the alarm transmission path should be displayed on the CIE.

NOTE There might be a temporary loss of service in the alarm transmission path or service provision. The risk associated with loss of communications can be mitigated by use of a dual path alarm transmission system. For dual path alarm transmission systems, loss of both signal paths is indicated as a fault at the CIE. However, it is not necessary to indicate loss of a single transmission path at the CIE. For the greatest resilience, e.g. where automatic summoning of the fire and rescue service is critical to life safety, the dual paths would use different technologies, e.g. IP connection and mobile technology.

This is a new clause.

14.21 Where the alarm transmission path relies upon a physical TCP/IP or similar data connection, the following recommendations should be met.

a) Final connections to the alarm routing equipment should be secured against unauthorized disconnection.

NOTE 1 This part of BS 5839 does not address cybersecurity.

b) Power supplies for routing equipment within the premises on which alarm transmission depends should meet the recommendations in 24.3.5.

NOTE 2 Where there is a dual path alarm transmission system, the recommendations in 14.21b) need only be applied to one of the transmission systems.

c) The physical data network cable used for alarm transmission within the building should, where possible (see Note 3), be differentiated from other services by colour.

NOTE 3 Where the network cable cannot conform to the recommendations given in 14.21c), or where local data network reliability is a concern, a dual path alarm transmission system would be beneficial.

This is a new clause.

14.22 Where the functionality is provided for automatic transmission of alarm signals to an ARC, there should be a label on or adjacent to the CIE to avoid a false activation that could summon the fire and rescue service.

NOTE A typical sign is shown in Figure 5. The triangle on the sign usually has a yellow fill.

Figure 5 – Typical false alarm notice

This is a new clause.

19 Manual call points

19.4 Manual call points should be located on escape routes and at all storey exits and all exits to open air that lead to a place of ultimate safety (whether or not the exits are specifically designated as fire exits). Manual call points located at storey exits should be sited either within the accommodation or on the landing of a stairway to which the storey exit gives access. In multi storey buildings with phased evacuation, in which only a limited number of floors are evacuated at one time, or where the exits from more than one zone lead to the same stairway, the manual call points should be sited only within the accommodation (see Figure 9).

NOTE Manual call points are not located on stairway landings in multi storey buildings with phased evacuation because persons travelling down the stairway might operate a manual call point several floors below that on which a fire is located, resulting in evacuation of inappropriate areas.

The new clause 19.4 - (previously BS 5839-1:2017, clause 20.2(d)) has been revised to clarify that manual call points should not be located in stairwells where exits from more than one zone lead to the same stairway.

It should be noted that BS 5839-1:2017, clause 20.2(f) has not been included in BS 5839-1:2025.

20 Types of fire detector and their selection

20.2 Heat detectors should not be used in:

a) areas of a Category P system in which a small fire (including any form of smouldering fire) has the potential to cause unacceptable damage;

NOTE 1 Products of combustion might be corrosive and cause considerable damage without burning the contents of the affected area.

b) escape routes in Category L systems;

NOTE 2 Heat detectors may be used in other areas, including rooms that open onto escape routes.

c) areas in which the production of smoke could present a threat to occupants before it is likely to be detected by people or heat detection; and

NOTE 3 These rooms normally include all rooms designed as sleeping accommodation. Previous versions of this part of BS 5839 accepted the use of heat detectors in sleeping accommodation on the basis that the objective of the detection was solely to protect the adjacent escape route. It is not implied that the recommendation for smoke detectors, rather than heat detectors, be applied retrospectively, until systems incorporating heat detection in these rooms are subject to substantial, or complete, replacement, or extension.

NOTE 4 Where a "mixed system" (as defined in BS 5839 6) is installed in premises, such as houses in multiple occupation, heat detection to warn occupants beyond accommodation in which a fire starts is acceptable, because, in these systems, domestic smoke alarms are provided to warn residents of a fire in their own accommodation.

d) areas in which heat detectors would have a high potential for false alarms (see Section 3).

The new clause 20.2 - (previously BS 5839-1:2017, clause 21.2(b)) has been revised with the addition of Note 2 which was previously part of the recommendation and the addition of Notes 3 & 4.

21.1 Provision of automatic fire detectors

The new clause 21.1.3(b) recommends that for a Category L4 system automatic fire detection should be sited at the top of a shaft of flue-like structure.

21.2.6 If a sprinkler head is to be regarded as a heat detector (see Note 1 to 21.2.5), the indication of sprinkler operation should be such that there can be no confusion between the area in which the sprinkler has operated and any of the fire detection zones. The sprinkler zone should not overlap with more than one fire detection zone.

This is a new clause.

21.2.12 Where obstructions are installed close to the ceiling, these obstructions should be treated as a wall if:

a) the gap between the top of the obstruction and the ceiling above is less than 300 mm; and

b) the obstruction is deeper than 10% of the overall ceiling height.

This is a new clause.

21.2.14 Where there are a number of closely spaced structural beams (approximately 1 m or less from centre to centre), such as floor joists, the following recommendations should be met.

a) If the longer dimension of the cells is not more than 10.6 m for smoke detectors or 7.5 m for heat detectors, then across the shorter cell dimension, the spacing, M, between detectors should be as given in Figure 18 and Table 2. The spacing for the end detector to the end wall should be 0.5M (see Figure 19). Detectors should be in the centre of the cells.

b) If the longer dimension of the cells is more than 10.6 m for smoke detectors or 7.5 m for heat detectors, then either:

1) the cell should be stopped to the depth of the beam and at not more than 10.6m for smoke detectors or 7.5 m for heat detectors; or

2) detection should be installed in every cell.

This is a new clause and was previously include as part of BS 5839-1:2017, clause 22.3(l).

21.4.6 In unventilated voids not greater than 1.5 m in depth, the sensing element of optical beam smoke detectors should be sited within the top 10% of the void or the top 125 mm, whichever is the greater (see Figure 12). Voids greater than 1.5 m in depth should be treated as a room and the recommendations given in 21.4.5 should be met.

This is a new clause

21.4.7 Where an area contains partitions or storage racks that reach within 300 mm of the ceiling, the partitions or storage racks should be treated as walls that extend to the ceiling (see Figure 14).

This is a new clause

21.4.8 Ceiling obstructions, such as structural beams, deeper than 10% of the overall ceiling height should be treated as walls (see Figure 15). Within horizontal voids, beams or obstructions that are deeper than 10% of the overall depth of the void, regardless of whether the void is above the ceiling or below the floor, should be treated as walls that subdivide the void.

This is a new clause

21.4.9 If detectors above a perforated false ceiling are used for protection of the area below the false ceiling, all of the following recommendations should be met.

a) The perforations should be substantially uniform, appear across the complete ceiling and make up not less than 40% of the surface throughout.

b) The dimension of each perforation in any direction should be not less than 10 mm.

c) The thickness of the ceiling should be not greater than three times the minimum dimension of each perforation.

This is a new clause

21.5 Siting of line heat detectors

The new clause 21.5- (previously BS 5839-1:2017, clause 22.6) has been significantly revised – see BS 5839-1:2025, clause 21.5 for more information.

21.6 Siting of aspirating smoke detection systems

21.6.4 The area covered by an aspirating smoke detector should not exceed that of a single fire detection zone given in Clause 12.

This is a new clause.

24.3 Standby power supplies

Clause 24.3.3(b) clarifies that it is permissible to write the date of the installation of batteries directly onto the battery(ies) using a permanent marker.

25 Cables, wiring and other interconnections

Clause 25.9 - (previously BS 5839-1:2017, clause 26.2 (o)) now clarifies that all fire alarm cables, including the low voltage mains supply, should be a single common colour with red being the preferred colour.

28 Electrical earthing

Clause 28.2 clarifies that the functional earthing (FE) conductor (e.g. cable screen) of fire alarm installation wiring systems should be identified in accordance with BS 7671:2018+A3, Table 51 which requires that an FE conductor should be identified by pink insulation or sleeving or by the alphanumeric marking "FE".

Section 3: Limitation of false alarms and unwanted fire alarm signals

BS 5839-1:2025, Section 3 has been reformatted and revised - see BS 5839-1:2025, Section 3 for more information.

34 Responsibility of installer

34.13 If the designer accepts responsibility for variations and this is communicated in the form of specific written requirements (e.g. within a specification), the installer should record these variations within the installation certificate.

This new clause was previously BS 5839-1:2017, clause 36.2(n) Note 3.

35 Installation practices and workmanship

The following clauses have been moved from BS 5839-1:2017, clause 26.2:

Clause 35.3 was BS 5839-1:2017, clause 26.2(f)

Clause 35.4 was BS 5839-1:2017, clause 26.2(g)

Clause 35.5 was BS 5839-1:2017, clause 26.2(k)

Clause 35.6 was BS 5839-1:2017, clause 26.2(f) – this clause has also been revised to recommend that all cables, including mineral insulated copper sheathed cables and steel wire armoured cables should be provided with mechanical protection where particularly arduous conditions might be experienced.

Clause 35.7 was BS 5839-1:2017, clause 26.2(i)

Clause 35.8 was BS 5839-1:2017, clause 26.2(l)

Clause 35.9 was BS 5839-1:2017, clause 26.2(n)

38 Documentation

38.1 (d) a cause and effect matrix or text description of how the cause and effect operates;

NOTE 5 The responsibilities of the different organizations involved need to be clearly defined and documented, as set out in Clause 5.

This is a new clause.

38.2 The commissioning technician should advise the purchaser or user of the system to keep all of the documentation listed in 38.1 up to date and available to all interested parties.

This is a new clause.

40 Handover

In BS 58391-:2017 this clause was titled "Acceptance". There are two new recommendations added. Before a system is accepted the purchaser, or an appropriate representative, should check that the correct number of replaceable elements and appropriate tools are incorporated for manual call points ***(BS 5839-1:2025, 40.2(d))*** *and that a cause-and-effect matrix or text description of how the cause and effect operates has been provided* ***(BS 5839-1:2025, 40.2(e5))****.*

43.2 Periodic inspection and test of the system

43.2.1 The recommendations in this subclause should be carried out by a competent person (see 3.13). Successive inspection and servicing visits should be undertaken at intervals of approximately 6 months (see Note 1).

NOTE 1 It would be acceptable for one inspection, test and service of the system to be carried out any time between 5 months and 7 months after the previous inspection, test and service.

NOTE 2 The date of acceptance is to be regarded as the datum for these periods.

The new clause 43.2.1 - (previously included in BS 5839-1:2017, clause 45.3) clarifies that inspection and servicing visits should be undertaken at intervals of approximately 6 months but Note 1 allows flexibility for service visits to be carried out at 6 months + /- 1 month.

Note 2 defines the datum for the service intervals as the date of acceptance. Therefore, if a system was serviced 7 months after the previous visit the next service visit would be due in 5 months' time to bring the servicing back on schedule.

43.2.10 All controls and visual indicators at the CIE should be checked for correct operation, and any timeclock should be checked and adjusted appropriately.

NOTE The correct time is particularly important where a time related filtering measure is adopted.

New clause 43.2.10 - (previously BS 5839-1:2017, clause 45.3(i)) now recommends that any CIE timeclocks should be checked and adjusted as part of the service visit.

43.3.25 It should be verified that the zone identification reported on the CIE matches the zone identification on the zone plan.

This is a new clause which recommends that servicing personnel need to ensure the zoning on the CIE matches the zoning on the zone plan.

43.4 Remote services and cybersecurity

This is a new clause.

44.1 Special inspection on appointment of a new servicing organization

New clause 44.1.2 - (previously BS 5839-1:2017, clause 46.2(b)) has been expanded to include the absence of a facility to transmit fire alarm signals automatically from a residential care home to an ARC as a major non-conformity against BS 5839-1:2025.

44.2.4 Where any defect cannot be rectified during the attendance of the servicing organization, any fault indications should not be concealed (e.g. by suppressing the fault indication).

This is a new clause.

Section 7: Extensions and modifications

This is a new section which incorporates some of the recommendations of BS 5839-1:2017, clause 46.4 – see BS 5839-1:2025, clauses 45 & 46 for further detail.

Annexes

The annexes have been reordered and a new Annex F has been added.

BS 5839-1:2025	BS 5839-1:2017
Annex A (Informative)	Annex A (Informative)
Annex B (Normative)	Annex C (Normative)
Annex C (Informative)	Annex B (Informative)
Annex D (Informative)	Annex E (Informative)
Annex E (Normative)	Annex D (Normative)
Annex F (Informative)	N/A
Annex G (Informative)	Annex G (Informative)
Annex H (Informative)	Annex F (Informative)