

BS 5839-6 GRADE D FIRE DETECTION AND FIRE ALARM INSTALLATION & COMMISSIONING CERTIFICATE

JOB DETAILS

AS RECOMMENDED IN ANNEX E OF BS 5839-6:2019+A1:2020

Certificate Reference	Client Name
Job Reference	Contract Reference

ADDRESS DETAILS

Number	Plot # (New Builds)	Town/City
Name (If Applicable)	County	
Address Line 1	Country	
Address Line 2	Postcode	

DESIGN INFORMATION

The following information has been provided by the system designer:

Grade D Fire Detection & Fire Alarm System Overview Yes ☐ No ☐

If Yes, details of the document are recorded below:

Document Reference	Document Revision
Date	

System Design Drawings Yes ☐ No ☐

BS 5839-6 Grade D Fire Detection & Fire Alarm Design Certificate Yes ☐ No ☐

If Yes, details of the document are recorded below:

Certificate Reference	
Organisation responsible for the system design	

If No, details of the organisation that provided instruction on the grade and category of the fire detection & fire alarm system to be installed.

Organisation responsible for instruction on grade and category

Should the BS 5839-6 Grade D Fire Detection & Fire Alarm Design Certificate not be available then this needs to be obtained from the system designer.

In instances where requests for the design certificate to be issued by the designer are not met then the absence of the design certificate needs to be recorded as a defect to the recommendations of BS 5839-6 Clause 7.2.

DWELLING TYPE

Occupancy Type

- ☐ Single-family dwelling
Including premises with long-term lodgers (but not boarding houses as they are outside the scope of BS 5839-6)
- ☐ Shared house
Houses shared by no more than six persons, generally living in a similar manner to a single family (e.g. houses rented by a number of students)

Class of Premises

PLEASE TICK
APPROPRIATE BOX

	Rented	Owner-Occupied
Bungalow	☐	☐
Two-storey house*	☐	☐
Three-storey house*	☐	☐
Flat or other single-storey unit	☐	☐
Maisonette with no floor above 4.5m from ground level*	☐	☐
Maisonette with any floor above 4.5m from ground level and with alternative means of escape*	☐	☐
Maisonette with any floor above 4.5m from ground level and no alternative means of escape*	☐	☐

Size of Premises

Does the property have one or more floors that are greater than 200m² in area Yes ☐ No ☐

*For premises identified above that have one or more floors greater than 200m², a Grade D system is not appropriate nor compliant with BS 5839-6 which recommends a Grade A system for premises of this size.

Houses in Multiple Occupations (HMOs)

Houses with long-term lodgers and houses shared by no more than six persons, generally living in a similar manner to a single family (e.g. houses rented by a number of students) are not classed as a HMO.
In England and Wales, under the Housing Act 2004, certain houses converted into blocks of flats prior to the Building Regulations 1991 coming into force are treated as HMOs.

- ☐ Individual dwelling unit, within the HMO, comprising a single room, **which include** cooking facilities (bedsit)
- ☐ Individual dwelling unit, within the HMO, comprising a single room, **which do not include** cooking facilities (bedsit)
- ☐ Individual dwelling unit, within the HMO, comprising two or more rooms
- ☐ HMOs of one or two storeys with no floor greater than 200m² in area with a single system covering both individual dwelling units, within the HMO, and communal areas*

DWELLING TYPE CONTINUED ON NEXT PAGE

DWELLING TYPE CONTINUED

*The detectors in individual dwelling units are incorporated within the system installed in the communal area and agreement with the enforcing authority has been obtained for this type of system. Each dwelling has a manual system reset button incorporated within the system. The operation of a smoke detector in one dwelling unit incorporates a short time delay which does not exceed 2 minutes in the activation of the fire alarm signal in another dwelling unit. During this delay period, the fire alarm signal within the dwelling unit in which the smoke detector is located will activate. If the system is manually reset within the dwelling to which has detected the fire before expiry of the delay period, no alarm signal is given in other dwelling units.

If this cannot be achieved, a Grade A system shall be installed in the communal areas with detectors sited in accordance with the recommendations of BS 5839-1 for a category L2 system.

Self-Catering Premises

☐ Self-catering premises or premises with short-term paying guests (e.g. holiday homes)

Sheltered Housing

☐ Individual dwelling unit*

*The system incorporates facilities for automatic transmission of fire alarm signals to the fire and rescue service (via a fire or social alarm receiving centre), both in the case of fire alarm signals from individual dwellings and signals from any fire detection in the common parts. When a scheme manager is on site, the alarm signal may be transmitted to the scheme manager, but, if the scheme manager does not respond to the alarm signal within 30s, the signal will be relayed automatically to the alarm receiving centre. The facility automatically opens a two-way speech channel to permit filtering of fire alarm signals.

Supported Housing

Housing (excluding sheltered housing) designed for vulnerable people with common characteristics, living as part of a community with support that is normally, but not necessarily, provided on a 24 hour basis. This includes housing for groups of people with learning or physical disabilities and mental health issues.

☐ Single storey

☐ Two or more storeys and **not** more than four bedrooms

Supported housing with 2 or more storeys and more than 4 bedrooms a Grade A system is required to comply with BS 5839-6.

SYSTEM GRADE AND CATEGORY

☐ I the appointed Installation Technician have been duly informed that the system has been designed and therefore will be installed in accordance with the following system grade and category.

Organisation responsible for prescribing the system grade and category

OR

☐ I the appointed Installation Technician have not been provided with details of the grade or category to which the system has been designed and therefore will install the system against the grade and category detailed below as it is my opinion that this most closely matches the designed equipment and siting.

SYSTEM GRADE AND CATEGORY CONTINUED ON NEXT PAGE

SYSTEM GRADE AND CATEGORY

System Grade Covered by This Certificate

Grade	Description
☐ D1	A system of one or more mains-powered detectors, each with a tamper proof standby supply consisting of a battery or batteries.
☐ D2	A system of one or more mains-powered detectors, each with an integral standby supply consisting of a user replaceable battery or batteries.

In instances where Grade D2 detectors are utilised, it is recommended that a warning label with the wording detailed below is applied to the front of the electrical distribution equipment in order to warn the occupier and/or the landlord that the fire detectors will require replacing for Grade D1 detectors if the use of the property changes from owner occupied to a rented property.

"CAUTION THIS FIRE ALARM INSTALLATION DOES NOT COMPLY WITH BS 5839-6 FOR THE REQUIREMENTS OF A RENTED PROPERTY - PLEASE REFER TO 'CHANGES TO THE BUILDING' SECTION OF YOUR HOME OCCUPIER'S GUIDE FOR MORE INFORMATION"

System Category Covered by This Certificate

Category	Description
LD	Automatic fire detection systems intended for the protection of life that are subdivided into the following system sub-categories:
☐ LD1	Systems installed throughout the premises, incorporating detectors in all circulation spaces that form part of the escape routes from the premises, and in all rooms and areas in which fire might start, other than toilets, bathrooms, and shower rooms.
☐ LD2	Systems incorporating detectors in all circulation spaces that form part of the escape routes from the premises, and in all specified rooms or areas that present a high fire risk to occupants.
☐ LD3	Systems incorporating detectors in all circulation spaces that form part of the escape routes from the premises.
PD	Automatic fire detection systems intended for the protection of property that are subdivided into the following system sub-categories:
☐ PD1	Systems installed throughout the premises, incorporating detectors in all rooms and areas in which fires might start, other than toilets, bathrooms, and shower rooms.
☐ PD2	Systems incorporating detectors only in defined rooms or areas of the premises in which the risk of fire to property is judged to warrant their provision.

Where there is a need to install a fire detection and fire alarm system for dwellings in which the characteristics of the occupants are unknown (e.g., new build dwellings), or for a group of dwellings where occupant characteristics vary (e.g. when designing retrofit fire detection and fire alarms throughout the properties of a local authority or social housing organisation) BS 5839-6 Table 1 shall be referenced to determine the system grade and category.

Category LD2 comprising of smoke detection within the escape routes, a heat detector in the kitchen, and a smoke detector in the principle habitable room is the minimum category for a new or materially altered premises to be compliant with BS 5839-6.

Should a lesser level of grade or category to that as recommended in BS 5839-6 Table 1 be adopted then this shall be listed as a variation to BS 5839-6.

LOCATION AND SITING OF FIRE DETECTORS			
	PLEASE TICK APPROPRIATE BOX		
	Yes	No	N/A
In a Category LD3 system, at least one smoke detector has been sited in each hallway or corridor and on each main landing of every staircase. In hallways or corridors exceeding 7.5m in length, no point within the hallway or corridor exceeds 7.5m from the nearest detector. (11.2a)	☐	☐	☐
Where smoke alarms are installed, no bedroom door is further than 3m from the nearest smoke alarm. (11.2b)	☐	☐	☐
At least one smoke detector is located between every bedroom and every other room in the dwellings, other than a toilet, bathroom or shower room. In single-storey dwellings protected by a single detector, the detector is as close as possible to living accommodation. However, where such rooms are located on both sides of any bedroom, a smoke detector should be sited midway between the doors to these rooms. (11.2c)	☐	☐	☐
Subject to compliance with BS 5839-6 11.2b), in a multi-storey house, at least one smoke detector is located on the ground floor between each staircase and every room, other than a toilet, bathroom or shower room. However, where such rooms are located on both sides of a staircase, a smoke detector is sited midway between the doors to these rooms. (11.2d)	☐	☐	☐
In open-plan accommodation where a stair is open to a living/dining area (or any other room in which fire might start), the living/dining area (or other room) is treated as a circulation area and be protected by a smoke detector. (11.2e) NOTE Care is necessary that smoke detectors in such areas are not sited in close proximity to any cooking equipment that forms part of the open-plan accommodation.	☐	☐	☐
In Category LD1 and LD2 systems, and Category PD systems, detectors within rooms are sited such that no point is further than 7.5m from the nearest smoke detector or, in rooms protected by heat detectors, no further than 5.3m from the nearest heat detector. (11.2h)	☐	☐	☐
Detectors are, where practicable, mounted on ceilings, and be located at least 300 mm horizontally from any wall or light fitting unless, in the case of light fittings, there is test evidence to prove that the proximity of the light fitting will not adversely affect the efficiency of the detector. (11.2i)	☐	☐	☐
Ceiling-mounted detectors are located such that their sensitive elements are between 25 mm and 150 mm below the ceiling in the case of heat detectors, or between 25 mm and 600 mm below the ceiling in the case of smoke detectors. Where there is a pitched ceiling, detectors are installed at, or not more than 600 mm vertically below, the apex for smoke detectors and 150 mm for heat detectors. For these detectors, the distances given in BS 5839-6 11.2a) and 11.2h) may be increased by 1% per degree of slope, up to a maximum of 25%. Where the depth between the eaves and the apex is not more than 600 mm, the ceiling has been treated as flat. (11.2j)	☐	☐	☐
LOCATION AND SITING OF FIRE DETECTORS CONTINUED ON NEXT PAGE			

LOCATION AND SITING OF FIRE DETECTORS CONTINUED

	PLEASE TICK APPROPRIATE BOX		
	Yes	No	N/A
Where structural beams create an obstacle to flow of smoke across a ceiling: (11.2k)			
1. If the depth of the beam is greater than 10% of the ceiling height, it has been treated as a wall (i.e. detectors should be provided on both sides of the beam) or, if the beam is less than 600 mm in depth, a detector has been installed on the underside of the beam;	☐	☐	☐
2. In other cases, detectors have not been installed closer to the beam than twice the depth of the beam or 500 mm, whichever is less.			
Where ceiling mounting is impracticable, in rooms and hallways not exceeding 10m in both length and breadth, and not exceeding 50m ² in area, detectors may, alternatively, be mounted on a wall provided that: (11.2l)			
1. The top of the detection element is between 150 mm and 300 mm below the ceiling; and	☐	☐	☐
2. the bottom of the detection element is above the level of any door opening; and			
3. the manufacturer's instructions state that the detector is suitable for wall mounting.			
Detectors have not been mounted adjacent to, or directly above, heaters or air-conditioning vents. (11.2m)	☐	☐	☐
Detectors have been mounted in positions that are reasonably accessible for maintenance. (11.2n)	☐	☐	☐
NOTE This is particularly important in the case of smoke alarms that incorporate a battery or that have a routine testing or alarm silence facility. Such detectors ought not, for example, to be mounted above a stairwell.			

INTERCONNECTION OF SMOKE/HEAT ALARMS

Method of interconnected smoke/heat alarms and other system equipment:

Interconnecting wiring between all smoke/heat alarms	Yes ☐	No ☐
Radio-link to connect all smoke/heat alarms	Yes ☐	No ☐
A combination of interconnecting wiring and radio-link connection	Yes ☐	No ☐

LOW-LEVEL CONTROLLERS

The system incorporates an alarm controller to provide the following functions at a central accessible location:

Test: test all alarms	Yes ☐	No ☐
Locate: easily find the alarm that has triggered the system	Yes ☐	No ☐
Silence: stop an alarm from sounding if there is no fire present	Yes ☐	No ☐

Where the occupant characteristics are unknown or where there is any doubt or concern for the ability of the occupant to carry out monthly testing of the system by pressing the test button incorporated within the smoke/heat alarm then the incorporation of a low-level alarm controller is recommended.

LIMITATION OF FALSE ALARMS			
	PLEASE TICK APPROPRIATE BOX		
	Yes	No	N/A
All smoke detectors within areas, such as hallways and corridors, into which kitchens open are of the optical type, unless there are overriding factors that preclude the use of optical smoke detectors [see also BS 5839-6 10.2b)]. (12.2c)	☐	☐	☐
Optical smoke detectors have not been sited in close proximity to rooms from which steam might issue, such as poorly ventilated bathrooms, shower rooms and certain kitchens. (12.2d)	☐	☐	☐
Fire detectors have not been installed in bathrooms and shower rooms. (12.2e)	☐	☐	☐
Where fire detectors are installed within kitchens, only heat detectors have been used. (12.2f)	☐	☐	☐
Where it is necessary to install a smoke detector in a room or area in which significant quantities of dust or dense tobacco smoke are likely to occur (e.g. a dusty loft space) a Thermoptek smoke alarm (SM-SN-1) has been used. Thermoptek technology combines an optical chamber with a temperature-sensing diode, with both inputs processed through a single algorithm. This dual criteria approach enables the alarm to corroborate smoke particle data against temperature change before triggering, which reduces the likelihood of false alarms caused by transient dust, tobacco smoke or cooking fumes, while still maintaining a fast response to real fire conditions.	☐	☐	☐
Carbon monoxide fire detectors have not been used in locations in which carbon monoxide might occur, under normal circumstances, in quantities sufficient to create the potential for unwanted alarms. (12.2i) NOTE Such areas include badly ventilated kitchens and areas in which vehicle or other exhaust fumes occur.	☐	☐	☐

FIRE ALARM DEVICES AND AUDIBILITY			
	PLEASE TICK APPROPRIATE BOX		
	Yes	No	N/A
All smoke alarms and heat alarms are interlinked, such that, when fire is detected by any smoke alarm or heat alarm, an audible fire alarm warning is given by all smoke alarms and heat alarms in the premises. (13.2c) NOTE The above recommendation does not apply to smoke alarms or heat alarms in a mixed system (see BS 5839-6 9.1.6) installed within an HMO if the smoke alarms and heat alarms are only intended to give a warning to occupants of the unit of accommodation in which fire occurs; under these circumstances only the smoke alarms and heat alarms (if provided) in that unit need be interlinked.	☐	☐	☐
Any facility for remote transmission of fire alarm signals (and, where appropriate, fault signals) has been tested to ensure it operates correctly. (13.13.2)	☐	☐	☐
All fire alarm warning devices (including any provided for people who are deaf or hard of hearing) operate correctly. (13.13.3)	☐	☐	☐

REMOTE TRANSMISSION OF ALARM SIGNALS

When ticked, this section is not applicable ☐

	PLEASE TICK APPROPRIATE BOX		
	Yes	No	N/A
In sheltered housing, facilities have been provided for automatic transmission of fire alarm signals to the fire and rescue service (via a fire or social ARC), both in the case of fire alarm signals from individual dwellings and signals from any fire detection in the common parts. (20.2c)	☐	☐	☐
NOTE When a scheme manager is on site, the alarm signal may be transmitted to the scheme manager, but, if the scheme manager does not respond to the alarm signal within 30s, the signal should be relayed automatically to the ARC. The facilities should automatically open a two-way speech channel to permit filtering of fire alarm signals.			

POWER SUPPLIES

The main supply to the smoke and heat alarms take the form of:

An independent circuit at the dwelling's consumer unit
This circuit has been labelled **"SMOKE ALARM DO NOT SWITCH OFF"** Yes ☐ No ☐

A regularly used local lighting circuit
This circuit has been labelled **"CAUTION SMOKE ALARM CONNECTED TO THIS CIRCUIT DO NOT SWITCH OFF"** Yes ☐ No ☐

A combination of an independent circuit and a regularly used local lighting circuit. Yes ☐ No ☐

If smoke alarms and heat alarms are to be interconnected by wiring, they must be connected on a single final circuit. In instances where smoke alarms and heat alarms are powered from different circuits then a radio-link interconnection must be utilised to ensure electrical safety to avoid a situation in which one device isolated for maintenance remains connected to a live device via the interconnect wiring.

	PLEASE TICK APPROPRIATE BOX		
	Yes	No	N/A
In an HMO, if the accommodation of each resident is served by a separate key or card-operated meter, smoke and heat alarms in common parts have not been supplied via the meter of any resident. (15.4f)	☐	☐	☐
NOTE This is to prevent isolation of the power supply to devices in common parts when, for example, the accommodation of one resident is vacated for a prolonged period of time.			
In an HMO with a permanent landlord's supply in the common parts, but prepayment meters in dwelling units, a supply to any smoke alarms in the dwelling units has been derived from the landlord's permanent supply in the common parts. (15.4g)	☐	☐	☐
Where this applies, labels have been displayed on or adjacent to the meter, as well as on or adjacent to any secondary consumer unit in the dwelling, which states "CAUTION. SMOKE ALARMS ARE NOT CONNECTED TO THIS CONSUMER UNIT. ISOLATION OF THIS UNIT, OR HAVING NO CREDIT ON THE METER, DOES NOT ISOLATE THE ELECTRICAL SUPPLY TO THE SMOKE ALARM."	☐	☐	☐
Joints in cables, other than those contained within the enclosures of equipment, have been avoided wherever practicable. All joints, other than those within system components, have been enclosed within junction boxes, labelled with the words "FIRE ALARM" to avoid confusion with other services. (23.3f)	☐	☐	☐

FIRE STOPPING & FIRE SEALING

PLEASE TICK APPROPRIATE BOX		
Yes	No	N/A
☐	☐	☐
☐	☐	☐

Where a cable passes through a wall, a small clearance hole has been provided. If additional mechanical protection is necessary, a smooth-bore sleeve should be sealed into the wall. The hole surrounding the cable should be as small as reasonably practicable and made good with materials that do not reduce the fire resistance of the construction. Spaces through which fire or smoke could spread should not be left around the cable, or around any conduit or trunking. (23.3h)

Where a wiring system, such as conduit, cable ducting or cable trunking, penetrates walls, floors or ceilings of fire compartments (such as those enclosing individual dwelling units in an HMO), it has been internally sealed so as to maintain the fire resistance at the wall, floor or ceiling, as well as being externally sealed, to maintain the required fire resistance. (23.3i)

NOTE A non-flame-propagating wiring system, having a maximum internal cross-sectional area of 710mm², need not be internally sealed.

TESTING & INSPECTION OF WIRING

The installation has been tested, inspection, and certificated in accordance with BS 7671

Yes ☐ No ☐

DETECTOR TESTING

PLEASE TICK APPROPRIATE BOX		
Yes	No	N/A
☐	☐	☐
☐	☐	☐

Smoke detectors have been functionally tested by a method that determines whether smoke can enter the detector chamber and produce a fire alarm signal (e.g. by use of apparatus that generates simulated smoke or suitable aerosols around the detector).

NOTE The material used should only be applied by a competent person and it should be such that the aerosol does not cause damage to, or affect the subsequent performance of, the detector; the manufacturer's guidance on suitable materials should be followed.

Heat detectors have been functionally tested by means of a suitable heat source, unless operation of the detector in this manner would then necessitate replacement of part or all of the sensing element.

NOTE The heat source should not have the potential to ignite a fire; live flame should not be used.

DETECTOR TESTING CONTINUED ON NEXT PAGE

DETECTOR TESTING CONTINUED

As part of the commissioning process, all smoke and heat detectors shall be functionally tested by means of suitable test equipment that meets the approval of the detector manufacturer in order that manufacturer's warranty is not invalidated. For guidance, this will involve the utilisation of a test kit that dispenses smoke aerosol and applies heat in a controlled way.

Testing of Grade D smoke and heat detectors requires a test kit specific to this detector type and test kits used for non-domestic systems do not provide a compliant means of testing that also meets with the manufacturer's recommendations.

Detector testing is not required if the manufacturer recommends not to do so and this variation to BS 5839-6 has been agreed in advance by all relevant parties and documented in this certificate. Further information regarding variations can be obtained by referencing BS 5839-6 Clause 3.65.

USER INFORMATION & OCCUPIER INFORMATION

To comply with BS 5839-6, it is essential that the occupier of the premises (which might mean all occupiers in the case of in an HMO) understands the operation of the system, the action to take in the event of a fire alarm signal, the means for avoidance of false alarms, the procedures for testing the system and the need for routine maintenance of the system.

It is important that the information provided is in full compliance with the recommendations of Clause **24.2** of BS 5839-6 to ensure that the user of the system can ensure that necessary steps are taken to avoid situations that are detrimental to the standard of protection afforded by the system and to ensure that the level of false alarms is minimised.

☐

The User QR Code label supplied within the fire alarm packaging has been applied so that appropriate guidance has been provided to the home occupier detailing all matters pertaining to the fire detection and fire alarm system.

BS 5839-6 states that it is the responsibility for the issue of the User & Occupier Information to be that of the organisation responsible for the commissioning and handover of the system.

MAINTENANCE

When ticked, this section is not applicable ☐

If the system is installed within a sheltered housing scheme, then it is essential that the system is subject to an annual inspection and servicing visit by a competent person which will involve the production and issue of a BS 5839-6 Grade D Inspection & Servicing certificate.

In such instances, it is strongly recommended that the system is maintained in accordance with BS 5839-6, Clause **26**.

In the case of Grade D systems installed within supported housing it is essential that a system logbook is issued to comply with BS 5839-6, Clause **27.2**.

☐

Appropriate guidance has been provided to the user to effectively supervise all matters pertaining to the fire detection and fire alarm system by issue of a Grade D Fire Alarm System Logbook.

BS 5839-6 states that the responsibility for the issue of the Grade D Fire Detection & Fire Alarm System Logbook shall be that of the organisation responsible for the commissioning and handover of the system.

VARIATIONS

Variations from the recommendations of BS 5839-6:

Clause	Description

Where applicable, it is the responsibility of the installation and commissioning organisation to ensure that the agreed variations are transferred to the Mains-Powered Grade D Fire Alarm System Logbook.

SYSTEM EQUIPMENT

The following system equipment has been commissioned on:

Product Code	Product Name	Batch Number	Location Installed
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			
Select Model Number			

ADDITIONAL INFORMATION

DECLARATION

I being the competent person responsible (as indicated by my signatures below) for the installation and commissioning of the fire detection and fire alarm system, particulars of which are detailed within this certificate and any associated documentation, **CERTIFY** that the said installation and commissioning for which I have been responsible complies to the best of my knowledge and belief with the recommendations of BS 5839-6 for the system grade and category described above, except for the variations, if any, stated in this certificate.

Name

Position

Company Name

Company Address

Date

Signature

(Please use E-Sign / Fill & Sign to complete signature)

This certificate may be required by an authority responsible for enforcement of fire safety legislation, such as the building control authority or housing authority. The recipient of this certificate might rely on the certificate as evidence of compliance with legislation. Liability could arise on the part of any organisation or person that issues a certificate without due care in ensuring its validity.