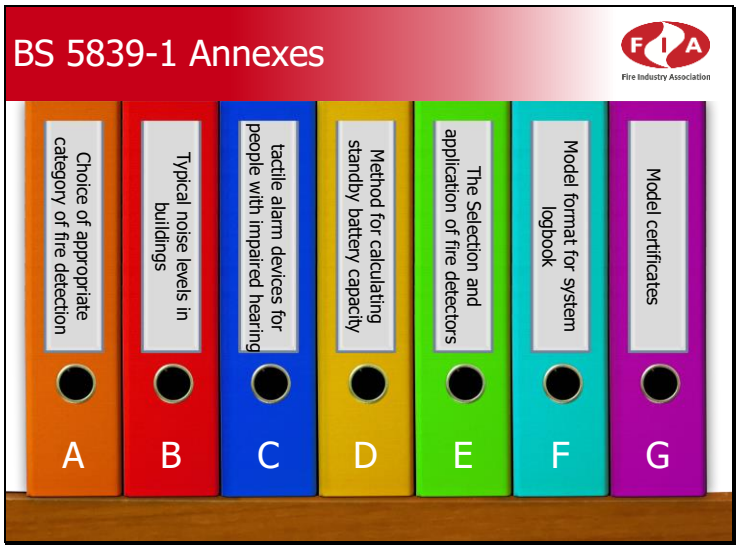

Fire Industry Association

# Conversion to Level 3 Fundamentals of Recommendations for Fire Detection & Fire Alarm systems in Non-Domestic Premises

Book Three

Slide 2




Annexes of BS 5839-1

Toward the back of BS5839-1, you will find a series of Annexes.

As per the main body of the BS5839-1 code of practice, the annexes are also split into both informative and normative annexes.

The style of the font for the text within the annexes generally uses roman upright text and does not use italics.

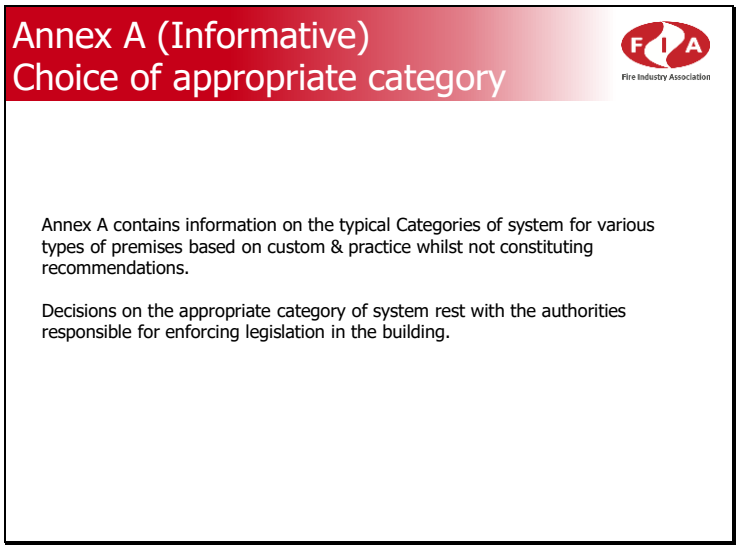
The informative annexes provide general information and an explanation on the purpose of that particular annex. It is not normative and could not be audited against.

The normative annexes are recommendations and use the word "should".
For example Annex 'D' relates to the calculation of the battery standby capacity. Therefore the battery capacity for each system should be calculated using this formula in order to claim compliance with BS 5839. These annexes would form part of the requirements against which you would be audited.

- Annex A (informative) Choice of appropriate category of fire detection and fire alarm system.
- Annex B (informative) Typical noise levels in buildings.
- Annex C (normative) Control and transmission equipment for tactile alarm devices provided for people with impaired hearing.
- Annex D (normative) Method for calculating standby battery capacity.
- Annex E (informative) The Selection and application of fire detectors.
- Annex F (informative) Model format for system logbook.
- Annex G (informative) Model certificates.

Learner notes

Slide 3




Annexes of BS 5839-1

**Choice of appropriate category of fire detection & alarm system**

The categories listed are examples, final selection of the category should be confirmed by the Fire Risk Assessment.

Annex A towards the back of BS 5839-1 provides information on the typical categories of system installed within buildings based on custom & practice.

Please note that this Annex is classed as informative and does not therefore constitute recommendations.
The annex lists some of the typical types of building and suggested categories. A few examples are shown on the next slides.

**Consultation**
Decisions regarding the appropriate Category of system for any specific building rest with the [fire] authorities responsible for enforcing legislation in the building: there can be more than one such enforcing authority. *(ref: this is a direct quotation from Annex A)*.

**National Health Hospitals,**
Firecode - Fire safety in the NHS
Health Technical Memorandum 05-03: Operational provisions (published October 2006)
Part B: Fire detection and alarm systems
Replaces Health Technical Memorandum 82 (HTM 82)
This standard refers extensively to BS 5839-1 but has special recommendations for hospitals, such as dBA sound pressure levels in patient areas.

Learner notes

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## Annex A (Informative) Choice of appropriate category

| Type of Premises | Typical category of system | Comments |
|---|---|---|
| Common places of work, such as offices, shops, factories, warehouses and restaurants | M or P2/M<br>or P1/M | Category M system normally satisfies the requirements of legislation. It is, however, often combined with a Category P system to satisfy the requirements of insurers, as company policy for protection of assets, or to protect against business interruption. |
| Hotels, hostels, student accommodation, houses in multiple occupation and similar premises with sleeping accommodation | L1 or L2 | In bedroom areas, the design requirements are usually based on the recommendations for a Cat L3. Detectors are, however, typically installed in most other rooms and areas, as a fire in almost any area of the building could pose a threat to sleeping occupants; the system category is, therefore, at least L2. In practice, few, if any, areas are left unprotected and the system cat is effectively L1, except that a variation from the recommendations applicable to a Cat L1 system might apply to the siting of heat, smoke or CO detectors in bedrooms; this often follows the recommendations of 22.3e) for detectors in a Cat L3 system. |

## Annex A (Informative) Choice of appropriate category

| Type of Premises | Typical category of system | Comments |
|---|---|---|
| Large public houses (No residential accommodation) | M | |
| Public houses with residential accommodation | L2 | |
| Schools, other than small single storey schools with less than 160 pupils | M or M/P2 or M/P2/L4 or M/P2/L5 | System category is normally based on a fire risk assessment. In many schools, a Category P system is installed to combat the hazard of arson. In schools that are partly occupied at certain times (e.g. during evening classes or community use), a Category L4 or L5 system is sometimes considered appropriate. |
| Hospitals | L1 (with possible minor variations) | Detailed guidance on areas to be protected and possible variations is given in HTM 05-03 Part B (in England and Wales) or SHTM 82 (in Scotland). |

## Annex A (Informative) Choice of appropriate category

| Type of Premises | Typical category of system | Comments |
|---|---|---|
| Places of assembly, (e.g. cinemas, theatres, nightclubs, exhibition halls, museums and galleries, leisure centres and casinos): | M | |
| Small premises (e.g. accommodating less than 300 persons) | M | |
| Other premises | L1 to L4 | L1 systems are often provided in large or complex buildings. |
| Transportation terminals | M/L5 | |
| Covered shopping centres | L1 to L3 | The exact design needs to be "tailor made" and often forms part of a fire engineering solution. |
| Residential care premises | L1 to L3 | L1 is regarded as appropriate for large premises. |
| Prisons | M/L5 | |
| Phased evacuation buildings | L3 | |

## Annex A (Informative) Choice of appropriate category

| Type of Premises | Typical category of system | Comments |
|---|---|---|
| Buildings in which other fire precautions, such as means of escape, depart from recognized guidance | M/L5 | Automatic fire detectors are sited in such a way as to compensate for the lower standard in other fire precautions |
| Buildings with "inner rooms", from which escape is possible only by passing through another ("access") room, where there is inadequate vision between the inner room and the access room | M/L5 | Smoke detectors are sited in the access room. |
| Buildings in which automatic fire detection is required to operate other fire protection systems (e.g. magnetic door holders) | M/L5 | Care is necessary to ensure that automatic fire detectors are sited such that cool smoke cannot pass below the level of the detectors that cause release of the magnetic door holders, and through the (still open) doors. |

## Annex A (Informative) Choice of appropriate category

| Type of Premises | Typical category of system | Comments |
|---|---|---|
| Situations in which fire could readily spread from an unoccupied area and prejudice means of escape from occupied areas | M/L4 or M/L5 | Custom and practice does not involve siting automatic fire detectors in all unoccupied areas, such as plant rooms and storage areas. |
| Any building in which automatic fire detection is provided as a requirement of a property insurer or to attract an insurance premium discount | M/P1 or M/P2 | |

Annexes of BS 5839-1

Annex A of BS 5839-1 describes the category of system that is typically installed in various types of premises. The information in the annex is not intended to constitute recommendations, but simply provides information on custom and practice, and on the conventional interpretation of fire safety legislation. Decisions regarding the appropriate category of system for any specific building rest with the authorities responsible for enforcing legislation in the building: there can be more than one such enforcing authority.

Learner notes

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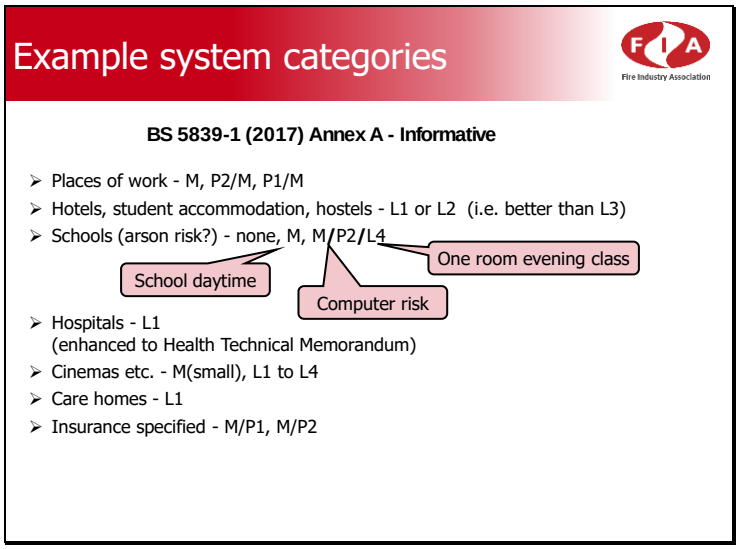



Annexes of BS 5839-1

Illustrated on the slide is the combined categories for a school M/P2/L4.

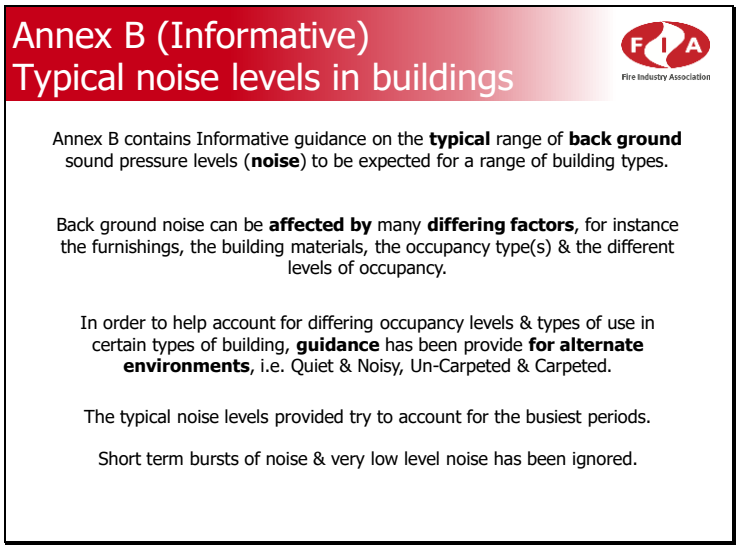
Normally Category M would have been sufficient, but to cover the risk of valuable computer equipment, AFD was required in certain areas as specified (P2).

In addition to this, to cover for the risk to the students at the evening class (regarding these as lone workers), Category L4 would be required.

For schools with special needs or high risk areas, a risk assessment may require cover to category L1 to L3.

Learner notes

Slide 11



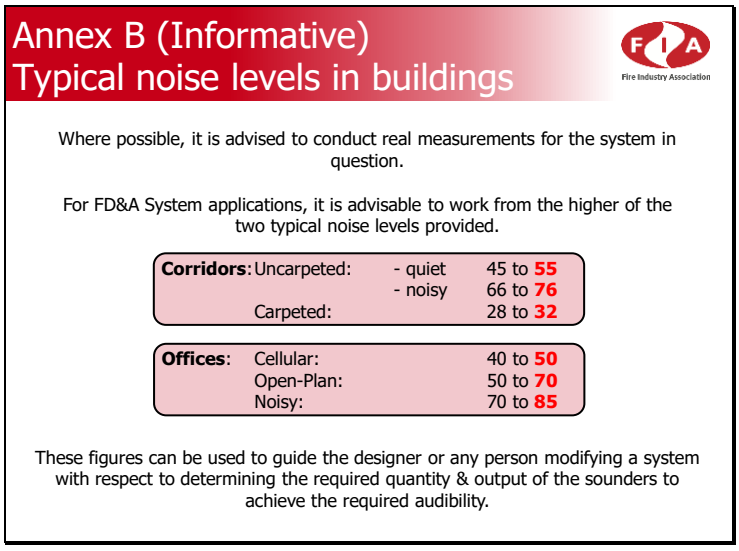

Annexes of BS 5839-1

**Alarm requirements and relaxations category M & L Systems as recommended in clause 16.**

The units and measurements for sound pressure [loudness] are in dBA.
65dBA is the general recommendation throughout all accessible areas of the building.
This figure maybe reduced to 60 dBA in enclosures up to 60 $m^2$ (e.g. small cellular offices), specific points of limited extent or stairways.
BS 5839-1 recognises that **2 or 3 dBA is not noticeable** to the human ear.
Consequently the 65 dBA may be regarded as arbitrary and a pragmatic view can be taken.
The premises should only use **one type of sounder**, i.e. bells and sounders should not be mixed.

Learner notes

Slide 12




Annexes of BS 5839-1

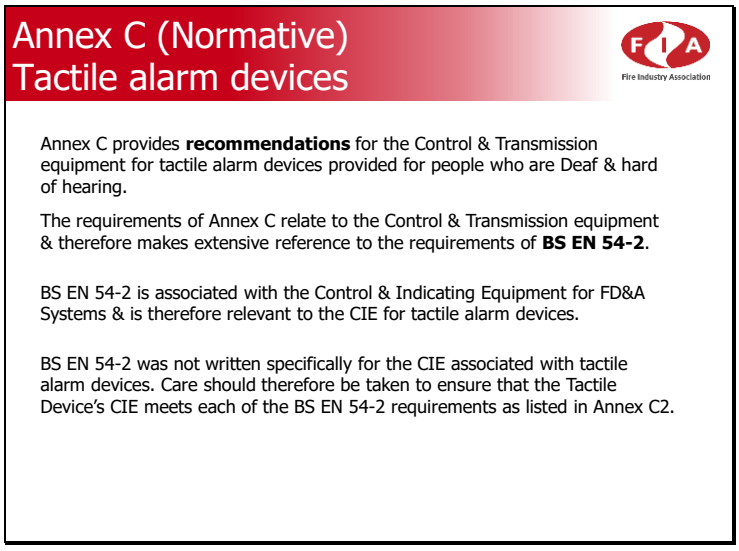
For further information on the different background noise levels for the various areas that you may encounter, please refer to Annex B of BS 5839-1, pages 132 to 133.

One area within the Annex, for arenas & auditoria is affixed with the letter [A]. The lower figure of 60 dBA relates to the back ground noise expected once a performance has stopped. It is advised within the annex to work from the higher figure of 75 dBA at the design stage.

**Hospitals**
Special considerations are required within hospitals with regards to the objective of the sound signal. Is the fire alarm signal intended for the staff rather than the patients etc.? For further guidance on the requirements for sound pressure levels within these areas, please refer to HTM 05-03 Part B for England & Wales or SHTM 82 for Scotland.

Learner notes

Slide 13




Annexes of BS 5839-1

Should there be a requirement to provide an additional means of warning for people who are deaf & hard of hearing, or in situations where one or more persons who are deaf & hard of hearing either work in isolation or tend to move around the building to a significant extent, an additional method of providing warning of a fire alarm activation might be required.

In some situations visual alarm signals might be appropriate.

However there may be a requirement to provide a tactile alarm signal, i.e. an alarm signal connected through a sense of touch, for example by using a vibrating pillow alarm or a paging device.

At present, no British Standard specifications for devices to alert the deaf & hard of hearing are available, but we are provided with the Clause 18 recommendations for fire alarm warnings for people who are deaf & hard of hearing in BS5839-1.

Clause 18.2.1 e) for general recommendations states that where tactile devices are provided, control and transmission equipment should conform to the recommendations of Annex C detailed on the next slide.

Learner notes

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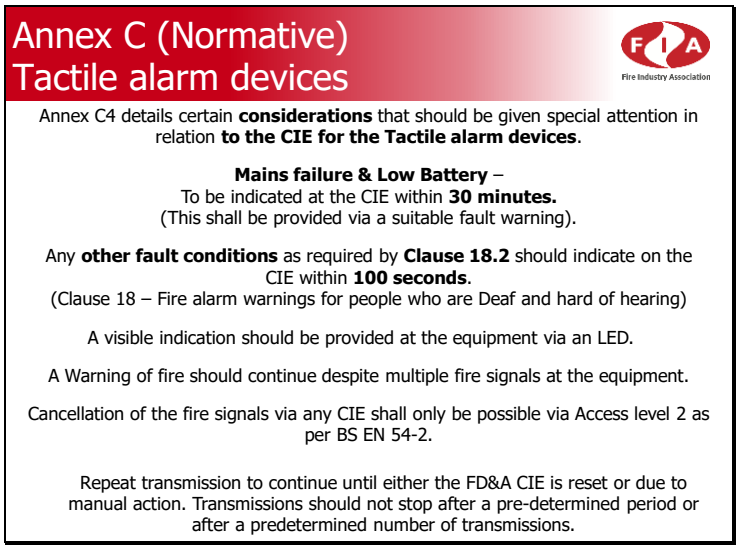
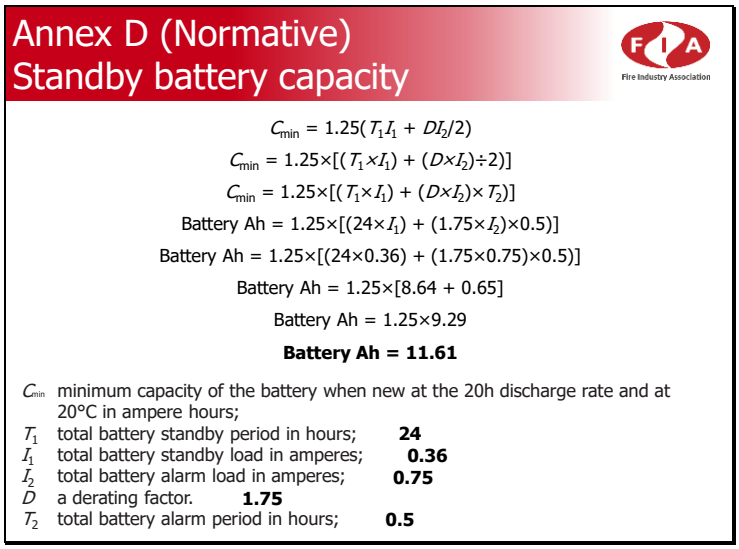



Annexes of BS 5839-1

Clause 18.2.1 e) for general recommendations states that where tactile devices are provided, control and transmission equipment should conform to the recommendations of Annex C detailed on this slide.

Learner notes

Slide 15




Annexes of BS 5839-1

Any Power Supply Unit within an FD&A System that requires a standby battery supply should be calculated using the formula provided within Annex D.

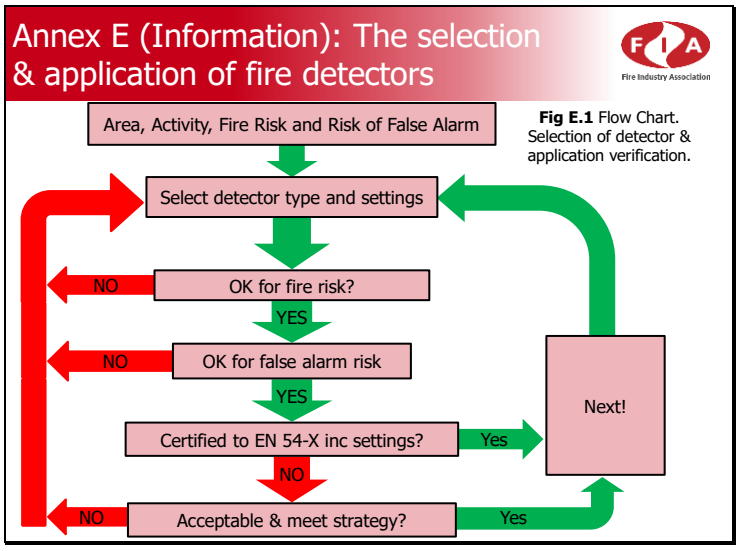
The designer should have calculated the battery capacity using this basic formula:
C min = $1.25[(I_1 \times T_1)+(I_2 \times D \div 2)]$
where:
**1.25** is the allowance for battery **25% ageing**
$T_1$ = standby period (h), 24h usually
$T_2$ = alarm time, almost always 0.5h
$I_1$ = measured standby current (A).
$I_2$ = measured battery alarm load (A).
**D** see battery manufacturer for **de-rating at high discharge current**. Usually this factor is **1.75**
**For example,**
$I_1$ is measured as being 0.36A,
T1 is 24h,
$I_2$ is measured as 0.75A
$T_2$ is 0.5h,
D = 1.75
Now calculate the minimum battery capacity required:
C min = 1.25 x {[24h x 0.36A]+[1.75 x 0.75A x 0.5h]}
= 1.25 x {[8.64]+[0.65]}
= 1.25 x {9.29A-h}
= 11.61A-h
i.e. in this example, the minimum battery capacity should be 12A-h

The **age factor of 1.25** is used to take into account the fact that lead acid batteries vary in performance with time. A new battery will have a capacity of less than it states on the battery label.

BS 5839-1 states that the batteries should last for at least 4 years.
The same procedure and comments relate to all fire alarm power supplies that use lead acid batteries as their standby supply.

Learner notes

Slide 16




Annexes of BS 5839-1

BS 5839-1 includes information on the selection of detector type to take into account the environment, the fire risk and the possibility of false alarms. It is essential that the commissioning technician should have this knowledge because there may well be features of the completed building that the designer was not aware of and the commissioning technician may need to challenge the design or change the detector type to ensure that the system is as reliable as it needs to be.

Many types of multi-sensor detectors are now available and these allow a better compromise when considering the fire risk and the potential for false activations compared with single sensor detectors.

The intention is that the selection of detectors should be documented and recorded in the O&M manual so that the commissioning technician and the service technician are aware of the decision process.

The first question is whether the detector is suitable for the fire risk. This is really based on the necessary speed of response to the type of fire. If the detector does not have suitable performance, then the intention is that a better alternative should be selected.

Once the risk is met, the next question is whether the selected detector will produce minimal false alarms. If the answer to that is no, then the designer should go back to the beginning and start again. Originally the selection would have been made between optical smoke, ionisation smoke, heat and CO detectors. With multi-sensor detectors there are many more options available.

The next question to address is whether the selected detector is certified to the appropriate part of EN 54. EN 54 is the harmonised product standard called up in BS 5839-1 and the construction products regulations require that the components of the fire alarm system are third party approved to the appropriate harmonised standard.

If all of these tests are positive then the detector is selected, the choice is recorded and it is on to the next detector. However if the answer to the first two is yes, but the answer to the third is no there is a further option, which is whether the product is approved to a different standard that would be acceptable, and if yes, is the fire strategy satisfied.

Learner notes

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## Table E.2
## Speed of response to certain fires

| Fire Hazard | Example Fire | Ionization | Optical | CO | Heat | Flame | Optical - Heat | Optical - Heat - CO |
|---|---|---|---|---|---|---|---|---|
| White smoke | Smoulder electrical | ** | ***** | * | * | * | ***** | ***** |
| White smoke | Smoulder wood | *** | ***** | **** | * | * | ***** | ***** |
| Dark smoke | Smoulder furnishing | ** | **** | ***** | * | * | **** | ***** |
| Smoulder to flame | Waste paper bin | **** | **** | ** | ** | *** | **** | **** |
| Flaming clean | Burning solvents | * | * | * | *** | ***** | *** | **** |
| Flaming dirty | Burning oils | ** | *** | ** | *** | ***** | **** | **** |

Very Good = *****, Good = ****, Moderate = ***, Poor = **, Very Poor = *

Annexes of BS 5839-1

BS 5839-1 2017 Annex E Table E2
This table is intended to show which devices are likely to give the quickest response to certain types of fire.

Learner notes

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## Table E.3
## Example avoiding false alarms

| Phenomena | False alarm | Ionization | Optical | CO | Heat | Flame | Optical - Heat | Optical - Heat - CO |
|---|---|---|---|---|---|---|---|---|
| Steam | Shower | **** | ** | ***** | ***** | ***** | *** | *** |
| Smoke | Kitchen | * | *** | **** | ***** | ***** | *** | **** |
| Dust | Warehouse | *** | ** | ***** | ***** | ***** | *** | *** |
| Other | Aerosol | * | * | ***** | ***** | ***** | *** | **** |
| High air flow | Air Condition | ** | ***** | ***** | ***** | ***** | ***** | ***** |
| Thermal change | Opening ovens | ** | ***** | ***** | * | ***** | **** | **** |
| Substance ingress | Insects | *** | *** | ***** | ***** | ***** | **** | ***** |
| Sparks/ naked flames | Welding | ** | ** | *** | *** | * | **** | ***** |

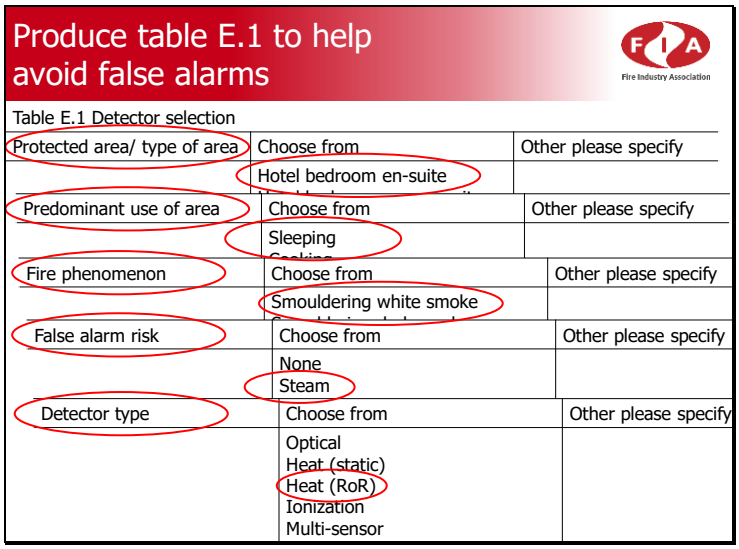
Very Good = *****, Good = ****, Moderate = ***, Poor = **, Very Poor = *

Annexes of BS 5839-1

BS 5839-1 2017 Annex E Table E3
This table is intended to show which devices are likely to respond certain phenomena.

Learner notes

Slide 19

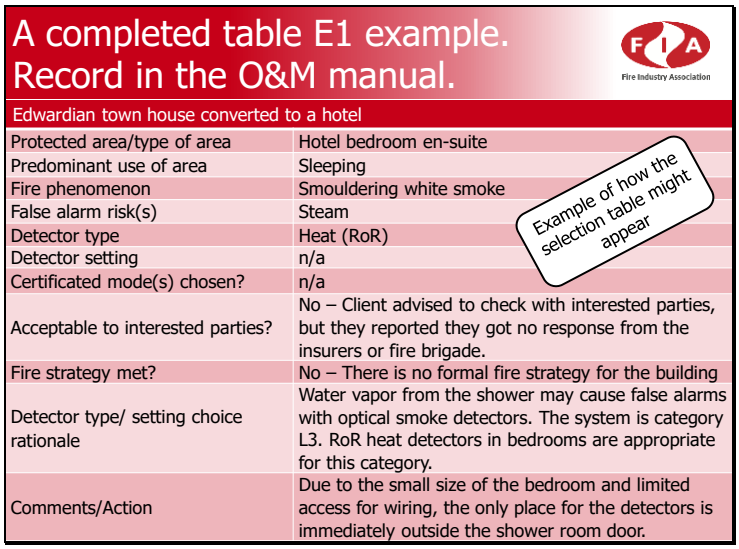



Annexes of BS 5839-1

The system designer and the maintainer dealing with unacceptable levels of false alarms, should use the process detailed in Annex E of BS5839-1.
There is a selection table, E1, which should be completed with the aid of Tables E2 & E3.
The selection table should be part of the system documentation and available to the maintainer.
Where the maintainer is selecting detectors because of modifications generally or to reduce false alarms, the maintainer should use the same process and complete the table or tables if there are more than one situation.

Learner notes

Slide 20

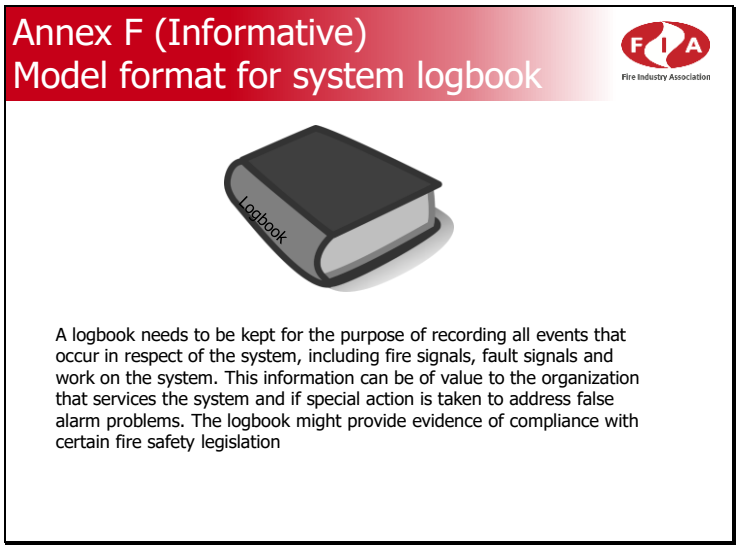



Annexes of BS 5839-1

This slide gives a simplified overview of the template that BS 5839-1 recommends for the detector decision record for the O&M manual. The template should be completed for each area on the system.

Learner notes

Slide 21



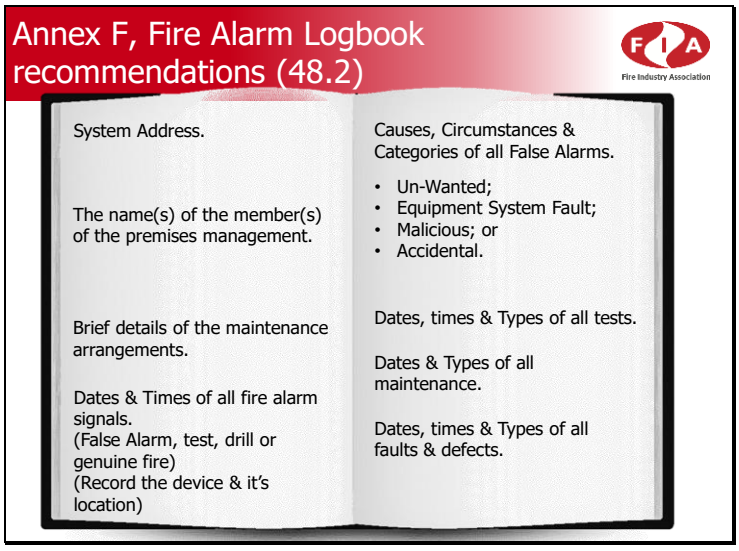

Annexes of BS 5839-1

A relevant member of the premises management should maintain a logbook and ensure that every entry is properly recorded.

This is required to satisfy the recommendations of BS 5839-1 and conformity to BS 5839-1 might be required by legislation.

Learner notes

Slide 22



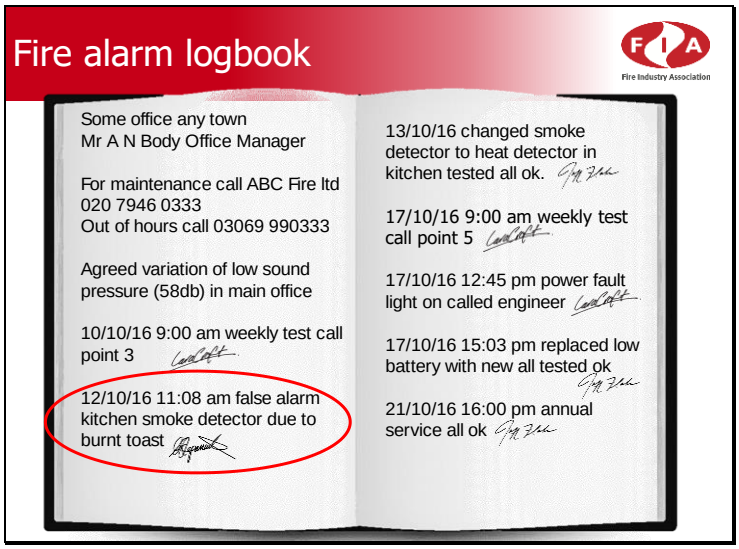

Annexes of BS 5839-1

**Logbook**

- The logbook should contain the following information:
  - The **name(s)** of the member(s) of the **premises management** to whom responsibility for the fire detection and fire alarm system is delegated;
  - Brief **details of maintenance arrangements**;
  - **Dates and times of all fire alarm signals** (regardless of whether the signal is a false alarm or is initiated as the result of a test, fire drill or genuine fire); if the fire alarm signal has resulted from the operation of a manual call point or fire detector, **the device and its location should be recorded**;
  - **Causes, circumstances** surrounding and **category of all false alarms**;
  - **Dates, times** and **types of** all **tests**;
  - **Dates, times** and **types of** all **faults and defects**;
  - **Dates and types** of all **maintenance** (e.g. service visit or non-routine attention).
  - All **Agreed Variations.**

Learner notes

Slide 23



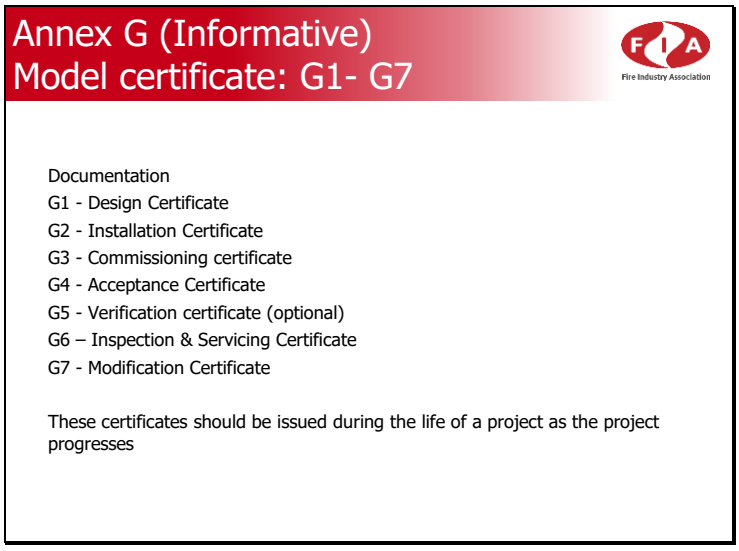

Annexes of BS 5839-1

This slide shows a possible example of a completed logbook.

NOTE: The logbook may be kept in electronic form but need to be accessible for all interested parties.

Learner notes

Slide 24




Annexes of BS 5839-1

Certification should be completed by the organization responsible for that section of work, on or as soon as practicable after each section of work is completed to certify compliance with BS 5839-1.

The model certificates for design, installation, commissioning, acceptance and verification are contained within Annex G as detailed below.

Annex G1: Design, required as per clauses 5.2 h) and 41.2 a).
Annex G2: Installation Certificate, required as per clauses 36.2 n) and 41.2 b).
Annex G3: Commissioning certificate, as per clause 39.2 f) and 41.2 a).
Annex G4: Acceptance Certificate, as per clause 42.
Annex G5: Verification certificate (optional), as per clause 43.
Annex G6: Inspection & Servicing, as per clause 45.
Annex G7: Modification Certificate, clause 46.4.2 g).

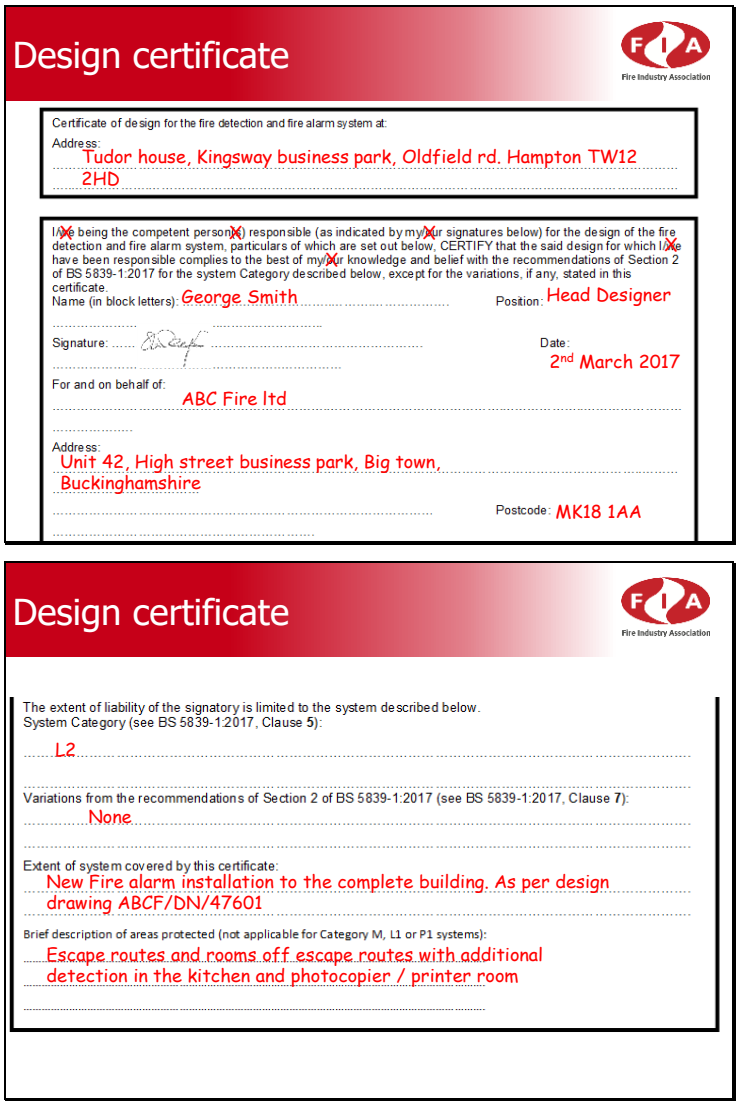
**BAFE SP203**
This is a modular scheme covering all aspects from design, installation, commissioning, verification to maintenance, each being a separate module. Companies would be certified to one or more of the modules.

**LPS 1014**
This scheme covers all aspects (design, installation, commissioning, verification, maintenance) in one certificate. Companies are approved to all aspect of the scheme.

**Service and Maintenance Schedule, clauses 44 to 46**
For continuing safety it is important that the fire alarm system is tested and maintained on a regular schedule, and it is recommended that a contract for this is agreed at commissioning. Records and evidence of this should be kept with the logbook.

Learner notes

Slide 25



## Design certificate

Fire Industry Association

Certificate of design for the fire detection and fire alarm system at:

Address:
Tudor house, Kingsway business park, Oldfield rd. Hampton TW12 2HD

I/We being the competent person(s) responsible (as indicated by my/our signatures below) for the design of the fire detection and fire alarm system, particulars of which are set out below, CERTIFY that the said design for which I/We have been responsible complies to the best of my/our knowledge and belief with the recommendations of Section 2 of BS 5839-1:2017 for the system Category described below, except for the variations, if any, stated in this certificate.

Name (in block letters): George Smith Position: Head Designer

Signature: Date: 2nd March 2017

For and on behalf of:
ABC Fire ltd

Address:
Unit 42, High street business park, Big town, Buckinghamshire

Postcode: MK18 1AA



## Design certificate

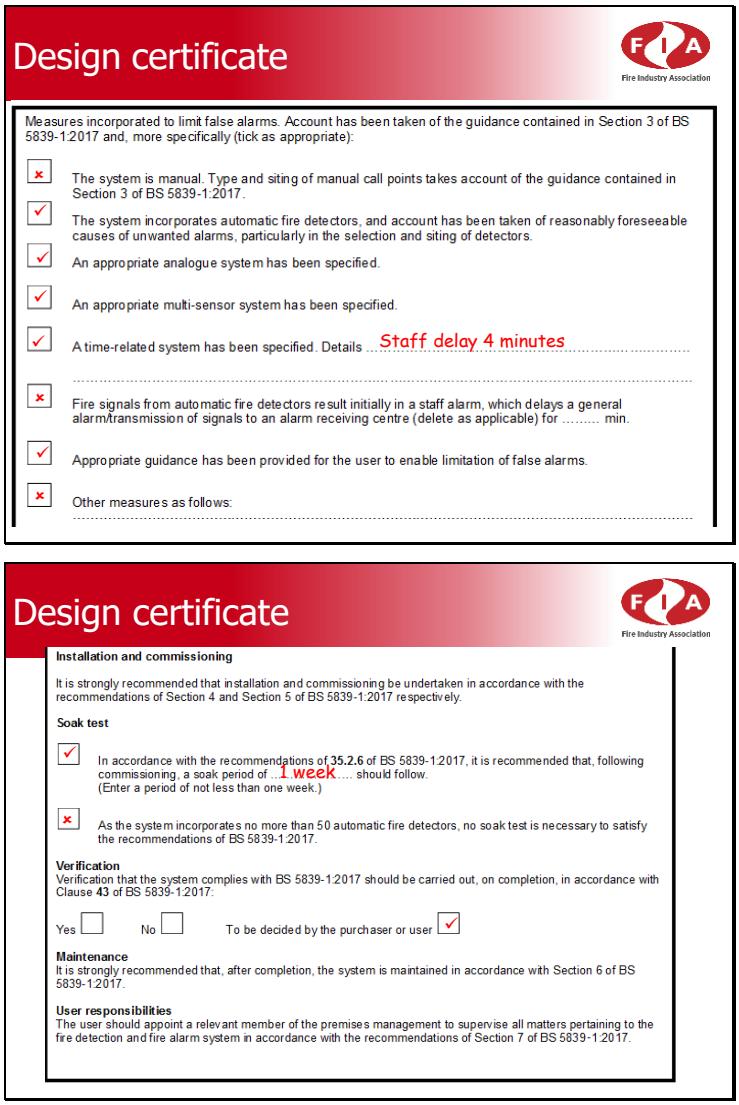
Fire Industry Association

The extent of liability of the signatory is limited to the system described below.
System Category (see BS 5839-1:2017, Clause 5):
L2

Variations from the recommendations of Section 2 of BS 5839-1:2017 (see BS 5839-1:2017, Clause 7):
None

Extent of system covered by this certificate:
New Fire alarm installation to the complete building. As per design drawing ABCF/DN/47601

Brief description of areas protected (not applicable for Category M, L1 or P1 systems):
Escape routes and rooms off escape routes with additional detection in the kitchen and photocopier / printer room



Design certificate

Fire Industry Association

Measures incorporated to limit false alarms. Account has been taken of the guidance contained in Section 3 of BS 5839-1:2017 and, more specifically (tick as appropriate):

- [x] The system is manual. Type and siting of manual call points takes account of the guidance contained in Section 3 of BS 5839-1:2017.
- [✓] The system incorporates automatic fire detectors, and account has been taken of reasonably foreseeable causes of unwanted alarms, particularly in the selection and siting of detectors.
- [✓] An appropriate analogue system has been specified.
- [✓] An appropriate multi-sensor system has been specified.
- [✓] A time-related system has been specified. Details ... Staff delay 4 minutes
- [x] Fire signals from automatic fire detectors result initially in a staff alarm, which delays a general alarm/transmission of signals to an alarm receiving centre (delete as applicable) for ..... min.
- [✓] Appropriate guidance has been provided for the user to enable limitation of false alarms.
- [x] Other measures as follows:

Design certificate

Fire Industry Association

**Installation and commissioning**

It is strongly recommended that installation and commissioning be undertaken in accordance with the recommendations of Section 4 and Section 5 of BS 5839-1:2017 respectively.

**Soak test**

- [✓] In accordance with the recommendations of **35.2.6** of BS 5839-1:2017, it is recommended that, following commissioning, a soak period of ...1 week.... should follow. (Enter a period of not less than one week.)
- [x] As the system incorporates no more than 50 automatic fire detectors, no soak test is necessary to satisfy the recommendations of BS 5839-1:2017.

**Verification**

Verification that the system complies with BS 5839-1:2017 should be carried out, on completion, in accordance with Clause **43** of BS 5839-1:2017:

Yes [ ] No [ ] To be decided by the purchaser or user [✓]

**Maintenance**

It is strongly recommended that, after completion, the system is maintained in accordance with Section 6 of BS 5839-1:2017.

**User responsibilities**

The user should appoint a relevant member of the premises management to supervise all matters pertaining to the fire detection and fire alarm system in accordance with the recommendations of Section 7 of BS 5839-1:2017.

Annexes of BS 5839-1

**The Designer takes responsibility for Design:**

- Signs for conformity to BS 5839-1.
- Enters Category – M, L1, P1/M etc.
- Includes Variations to Section 2 as agreed.
- Enters on certificate, areas covered for L5, L4, L3, L2, P2 categories.
- Note; L1 and P1 cover **all** areas.

Learner notes

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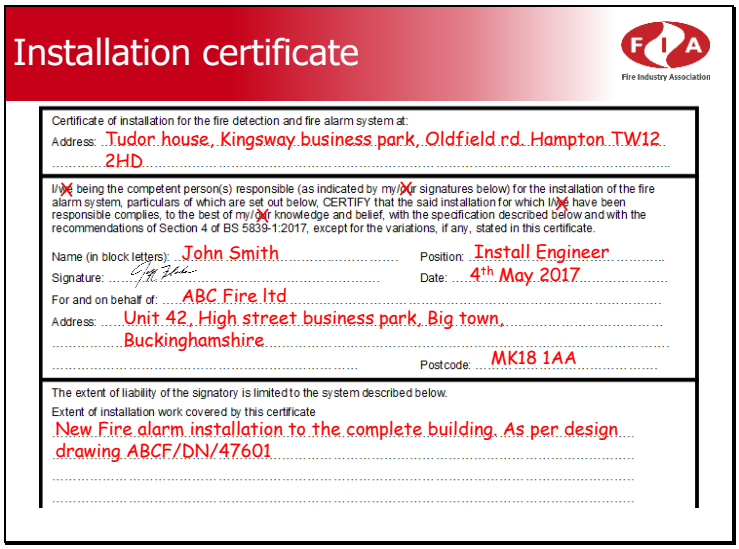


Installation certificate

Fire Industry Association

Certificate of installation for the fire detection and fire alarm system at:

Address: Tudor house, Kingsway business park, Oldfield rd. Hampton TW12 2HD

I/We being the competent person(s) responsible (as indicated by my/our signatures below) for the installation of the fire alarm system, particulars of which are set out below, CERTIFY that the said installation for which I/We have been responsible complies, to the best of my/our knowledge and belief, with the specification described below and with the recommendations of Section 4 of BS 5839-1:2017, except for the variations, if any, stated in this certificate.

Name (in block letters): John Smith Position: Install Engineer

Signature: Date: 4th May 2017

For and on behalf of: ABC Fire ltd

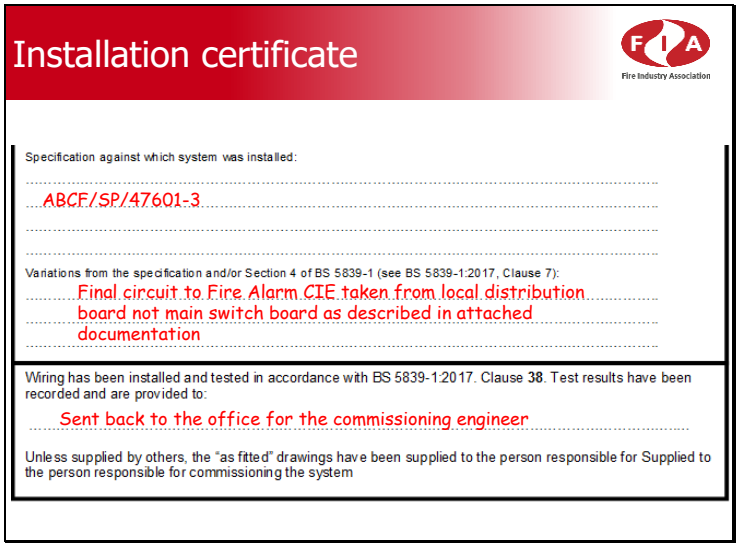
Address: Unit 42, High street business park, Big town, Buckinghamshire

Postcode: MK18 1AA

The extent of liability of the signatory is limited to the system described below.

Extent of installation work covered by this certificate

New Fire alarm installation to the complete building, As per design drawing ABCF/DN/47601



Installation certificate

Fire Industry Association

Specification against which system was installed:

ABCF/SP/47601-3

Variations from the specification and/or Section 4 of BS 5839-1 (see BS 5839-1:2017, Clause 7):

Final circuit to Fire Alarm CIE taken from local distribution board not main switch board as described in attached documentation

Wiring has been installed and tested in accordance with BS 5839-1:2017, Clause 38. Test results have been recorded and are provided to:

Sent back to the office for the commissioning engineer

Unless supplied by others, the "as fitted" drawings have been supplied to the person responsible for Supplied to the person responsible for commissioning the system

Annexes of BS 5839-1

**The Installer takes responsibility for installation:**

- Signs for conformity to Section 4 of BS 5839-1.
- Includes Variations to Section 4 as agreed.
- Enters on certificate, Specification against which the system was installed.
- Test results and as fitted drawings completed and given to the person responsible for commission the system.

Learner notes

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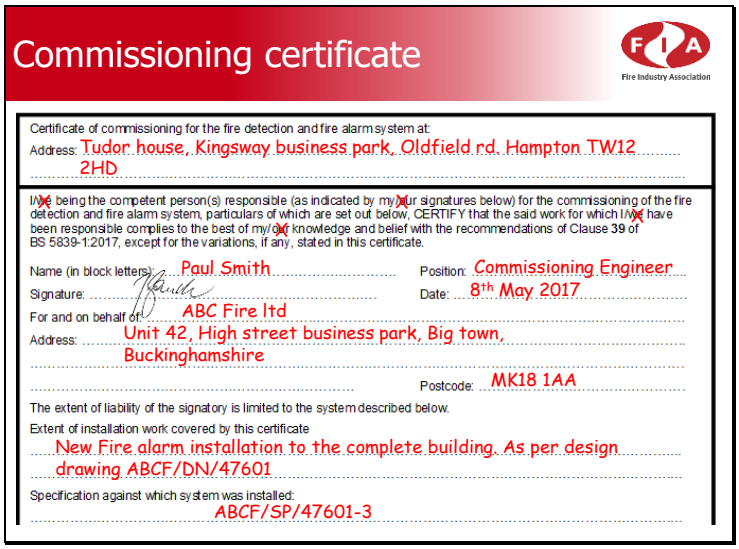


Commissioning certificate

Fire Industry Association

Certificate of commissioning for the fire detection and fire alarm system at:

Address: Tudor house, Kingsway business park, Oldfield rd, Hampton TW12 2HD

I/We being the competent person(s) responsible (as indicated by my/our signatures below) for the commissioning of the fire detection and fire alarm system, particulars of which are set out below, CERTIFY that the said work for which I/We have been responsible complies to the best of my/our knowledge and belief with the recommendations of Clause 39 of BS 5839-1:2017, except for the variations, if any, stated in this certificate.

Name (in block letters): Paul Smith Position: Commissioning Engineer

Signature: Date: 8th May 2017

For and on behalf of: ABC Fire ltd

Address: Unit 42, High street business park, Big town, Buckinghamshire

Postcode: MK18 1AA

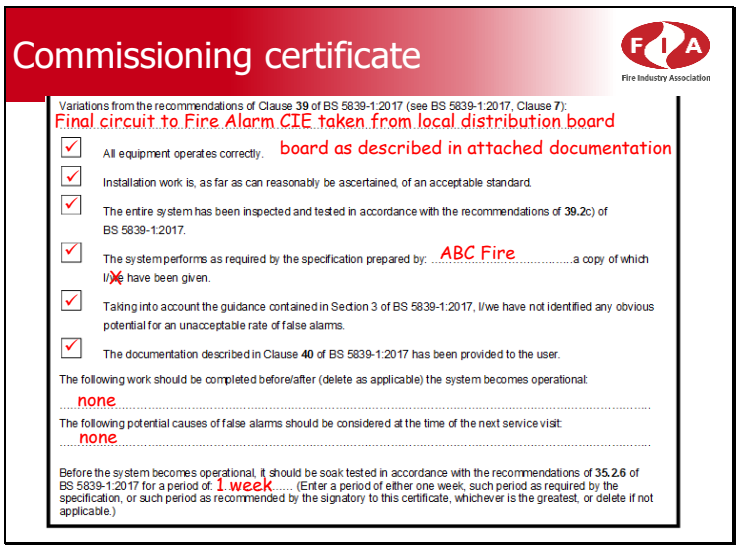
The extent of liability of the signatory is limited to the system described below.

Extent of installation work covered by this certificate

New Fire alarm installation to the complete building. As per design drawing ABCF/DN/47601

Specification against which system was installed:

ABCF/SP/47601-3



Commissioning certificate

Fire Industry Association

Variations from the recommendations of Clause 39 of BS 5839-1:2017 (see BS 5839-1:2017, Clause 7):

Final circuit to Fire Alarm CIE taken from local distribution board

☑ All equipment operates correctly. board as described in attached documentation

☑ Installation work is, as far as can reasonably be ascertained, of an acceptable standard.

☑ The entire system has been inspected and tested in accordance with the recommendations of 39.2c) of BS 5839-1:2017.

☑ The system performs as required by the specification prepared by: ABC Fire .....a copy of which I/We have been given.

☑ Taking into account the guidance contained in Section 3 of BS 5839-1:2017, I/we have not identified any obvious potential for an unacceptable rate of false alarms.

☑ The documentation described in Clause 40 of BS 5839-1:2017 has been provided to the user.

The following work should be completed before/after (delete as applicable) the system becomes operational:

none

The following potential causes of false alarms should be considered at the time of the next service visit:

none

Before the system becomes operational, it should be soak tested in accordance with the recommendations of 35.2.6 of BS 5839-1:2017 for a period of: 1 week ..... (Enter a period of either one week, such period as required by the specification, or such period as recommended by the signatory to this certificate, whichever is the greatest, or delete if not applicable.)

Annexes of BS 5839-1

**The Commissioner takes responsibility for Commissioning:**

- Any deficiencies should be resolved before issuing a commissioning certificate.
- Any variations should be written down on the commissioning certificate and justified.
- Merely noting a variation is not helpful, the reason or justification is essential.
- Possible causes of False Alarms should be identified.

Learner notes

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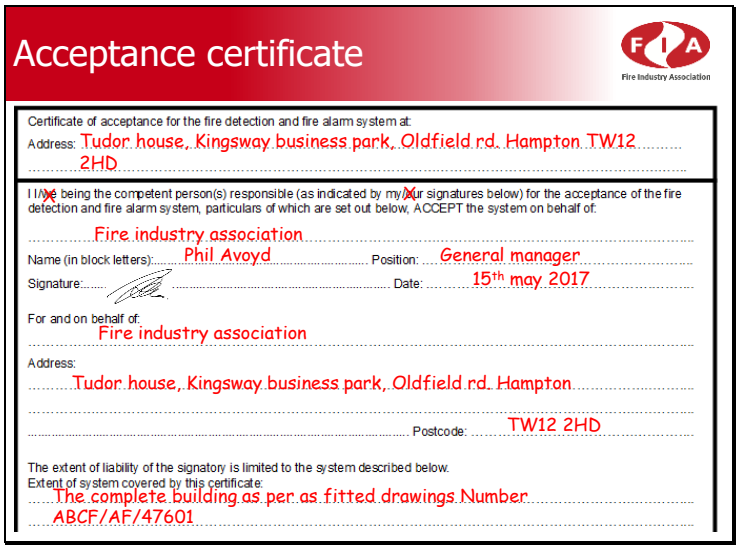


Acceptance certificate

Fire Industry Association

Certificate of acceptance for the fire detection and fire alarm system at:

Address: Tudor house, Kingsway business park, Oldfield rd. Hampton TW12 2HD

I/We being the competent person(s) responsible (as indicated by my/our signatures below) for the acceptance of the fire detection and fire alarm system, particulars of which are set out below, ACCEPT the system on behalf of:

Fire industry association

Name (in block letters): Phil Avoyd Position: General manager

Signature: Date: 15th may 2017

For and on behalf of:

Fire industry association

Address:

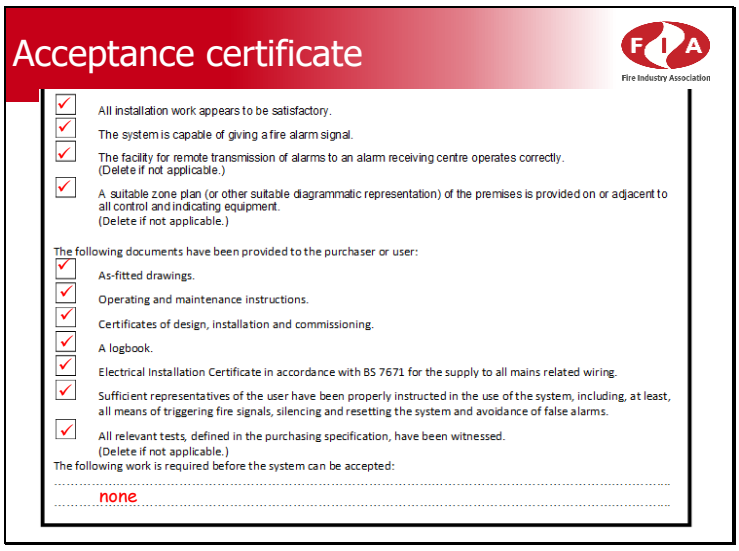
Tudor house, Kingsway business park, Oldfield rd. Hampton

Postcode: TW12 2HD

The extent of liability of the signatory is limited to the system described below.

Extent of system covered by this certificate:

The complete building as per as fitted drawings Number ABCF/AF/47601



Acceptance certificate

Fire Industry Association

- ✓ All installation work appears to be satisfactory.
- ✓ The system is capable of giving a fire alarm signal.
- ✓ The facility for remote transmission of alarms to an alarm receiving centre operates correctly. (Delete if not applicable.)
- ✓ A suitable zone plan (or other suitable diagrammatic representation) of the premises is provided on or adjacent to all control and indicating equipment. (Delete if not applicable.)

The following documents have been provided to the purchaser or user:

- ✓ As-fitted drawings.
- ✓ Operating and maintenance instructions.
- ✓ Certificates of design, installation and commissioning.
- ✓ A logbook.
- ✓ Electrical Installation Certificate in accordance with BS 7671 for the supply to all mains related wiring.
- ✓ Sufficient representatives of the user have been properly instructed in the use of the system, including, at least, all means of triggering fire signals, silencing and resetting the system and avoidance of false alarms.
- ✓ All relevant tests, defined in the purchasing specification, have been witnessed. (Delete if not applicable.)

The following work is required before the system can be accepted:

none

Annexes of BS 5839-1

The acceptance certificate should be signed by the client/premises manager.

- To confirm that the installation work appears satisfactory.
- That the system is capable of giving an alarm signal.
- That any remote connections to an alarm receiving centre operates correctly.
- The correct documentation has been supplied.

If a acceptance certificate has not been issued and signed then the system would not be compliant with BS 5839-1.

| Learner notes |
| --- |
| |

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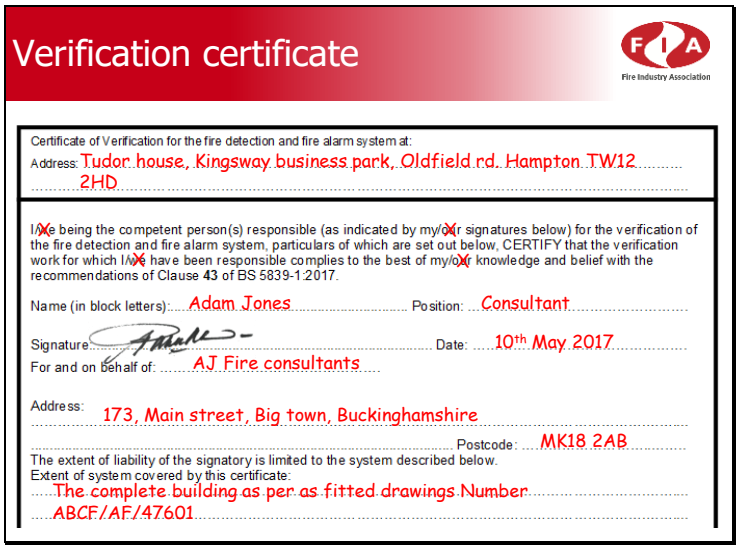


Verification certificate

Fire Industry Association

Certificate of Verification for the fire detection and fire alarm system at:

Address: Tudor house, Kingsway business park, Oldfield rd. Hampton TW12 2HD

I/We being the competent person(s) responsible (as indicated by my/our signatures below) for the verification of the fire detection and fire alarm system, particulars of which are set out below, CERTIFY that the verification work for which I/We have been responsible complies to the best of my/our knowledge and belief with the recommendations of Clause 43 of BS 5839-1:2017.

Name (in block letters): Adam Jones Position: Consultant

Signature: Date: 10th May 2017

For and on behalf of: AJ Fire consultants

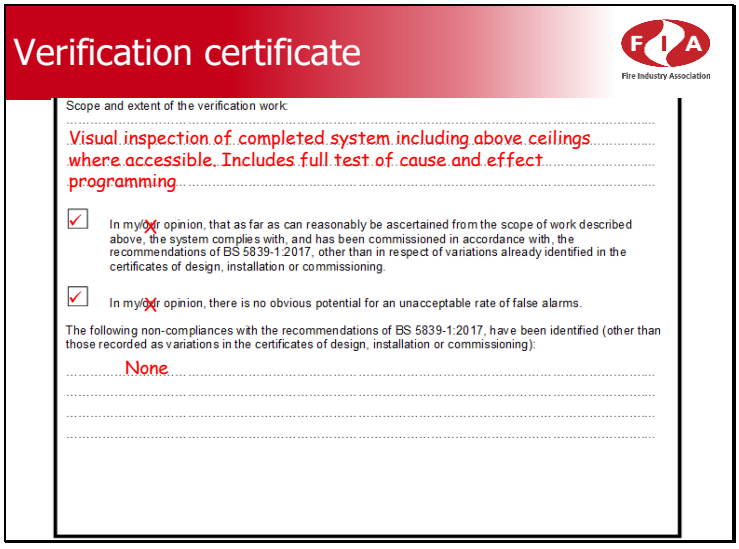
Address: 173, Main street, Big town, Buckinghamshire

Postcode: MK18 2AB

The extent of liability of the signatory is limited to the system described below.

Extent of system covered by this certificate:

The complete building as per as fitted drawings Number ABCF/AF/47601



Verification certificate

Fire Industry Association

Scope and extent of the verification work:

Visual inspection of completed system including above ceilings where accessible. Includes full test of cause and effect programming

☑ In my/our opinion, that as far as can reasonably be ascertained from the scope of work described above, the system complies with, and has been commissioned in accordance with, the recommendations of BS 5839-1:2017, other than in respect of variations already identified in the certificates of design, installation or commissioning.

☑ In my/our opinion, there is no obvious potential for an unacceptable rate of false alarms.

The following non-compliances with the recommendations of BS 5839-1:2017, have been identified (other than those recorded as variations in the certificates of design, installation or commissioning):

None

Annexes of BS 5839-1

An optional certificate for when Design Installation and Commissioning have been carried out by different organisations.

- Works have been carried out in accordance with the recommendations of BS 5839-1.
- The extent of work done should be recorded.
- List any non-compliances with BS 5839-1:2017.
- Confirm that there is no obvious potential for false alarm.
- Persons doing verification should be competent in the design fire detection and fire alarm systems to BS 5839-1:2017 and familiar with installation methodology.

Learner notes

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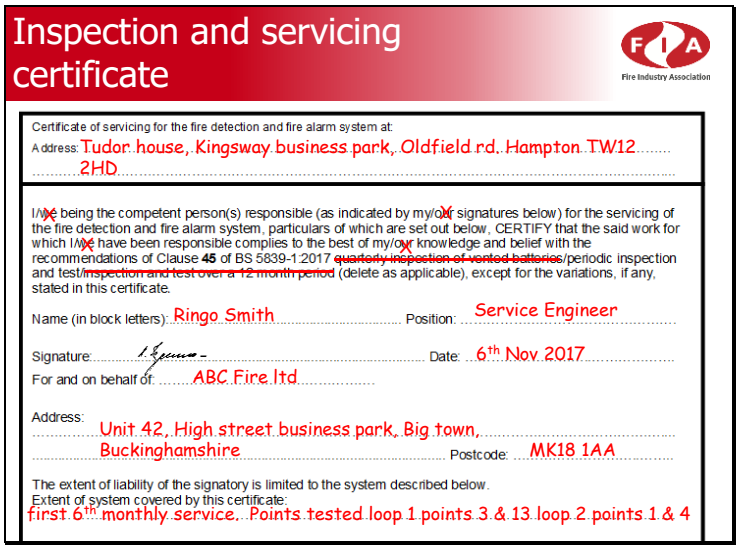


Inspection and servicing certificate

Fire Industry Association

Certificate of servicing for the fire detection and fire alarm system at:

Address: Tudor house, Kingsway business park, Oldfield rd, Hampton TW12 2HD

I/We being the competent person(s) responsible (as indicated by my/our signatures below) for the servicing of the fire detection and fire alarm system, particulars of which are set out below, CERTIFY that the said work for which I/We have been responsible complies to the best of my/our knowledge and belief with the recommendations of Clause **45** of BS 5839-1:2017 ~~quarterly inspection of vented batteries~~/periodic inspection and test/~~inspection and test over a 12 month period~~ (delete as applicable), except for the variations, if any, stated in this certificate.

Name (in block letters): Ringo Smith Position: Service Engineer

Signature: Date: 6th Nov 2017

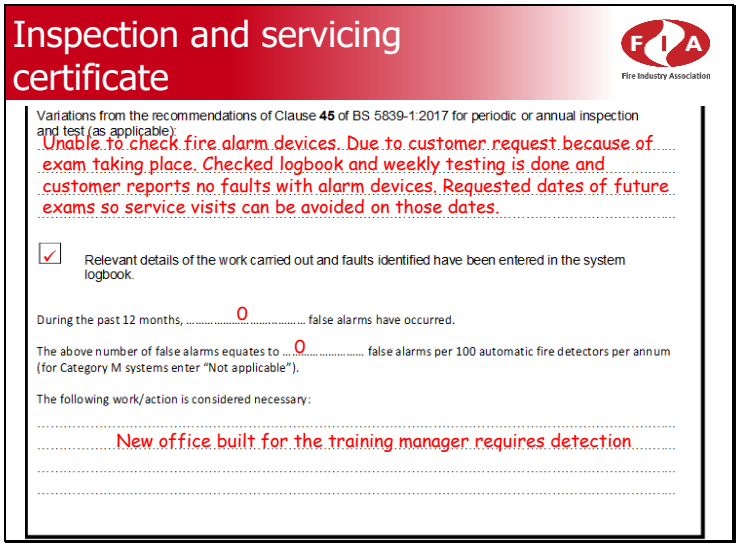
For and on behalf of: ABC Fire ltd

Address: Unit 42, High street business park, Big town, Buckinghamshire Postcode: MK18 1AA

The extent of liability of the signatory is limited to the system described below.

Extent of system covered by this certificate:

first 6th monthly service, Points tested loop 1 points 3 & 13 loop 2 points 1 & 4



Inspection and servicing certificate

Fire Industry Association

Variations from the recommendations of Clause **45** of BS 5839-1:2017 for periodic or annual inspection and test (as applicable):

Unable to check fire alarm devices. Due to customer request because of exam taking place. Checked logbook and weekly testing is done and customer reports no faults with alarm devices. Requested dates of future exams so service visits can be avoided on those dates.

☑ Relevant details of the work carried out and faults identified have been entered in the system logbook.

During the past 12 months, 0 false alarms have occurred.

The above number of false alarms equates to 0 false alarms per 100 automatic fire detectors per annum (for Category M systems enter "Not applicable").

The following work/action is considered necessary:

New office built for the training manager requires detection

Annexes of BS 5839-1

**The Maintainer takes responsibility for Inspection & Servicing**

- Any outstanding defects should be brought to the attention of the premises management before issuing a Inspection & servicing certificate.
- A record of the inspection and test should be written on the Inspection & Servicing certificate.
- Any variations should be written down on the Inspection & Servicing certificate and justified.
- Any outstanding issues or work requiring further attention should be recorded.

Learner notes

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Modification certificate

Fire Industry Association

Certificate of modification for the fire detection and fire alarm system at:

Address: Tudor house, Kingsway business park, Oldfield rd. Hampton TW12 2HD

I/we being the competent person(s) responsible (as indicated by my/our signatures below) for the modification of the fire detection and fire alarm system, particulars of which are set out below, CERTIFY that the said modification work for which I/we have been responsible has to the best of my/our knowledge and belief been carried out in accordance with the recommendations of **46.4** of BS 5839?1:2017, except for the variations, if any, stated in this certificate.

Name (in block letters): Ringo Smith Position: Service Engineer

Signature: Date: 14th Nov 2017

For and on behalf of: ABC Fire ltd

Address: Unit 42, High street business park, Big town, Buckinghamshire Postcode: MK18 1AA

The extent of liability of the signatory is limited to the system described below.

Extent of system covered by this certificate:

New detector in the office for the new training manager

Modification certificate

Fire Industry Association

Variations from the recommendations of Clause **46.4** of BS 5839-1:2017

none

☑ Following the modifications, the system has been tested in accordance with the recommendations of **46.4.2** of BS 5839-1:2017.

☑ Following the modifications, as-fitted drawings and other system records have been updated as appropriate.

**I/we the undersigned confirm that the modifications have introduced no additional variations from the recommendations of BS 5839-1:2017, other than those recorded below:**

**Signed:** Ringo Smith

**Capacity:** Service Engineer ABC Fire ltd

(e.g. maintenance organization, system designer, consultant or user representative)

Annexes of BS 5839-1

On completion of the work and completion of the tests a Modification Certificate, signed by the person responsible for the modification, should be issued, confirming that the work has:

- Been carried out in accordance with the recommendations of BS 5839-1.
- The extent of work done should be recorded .
- Any outstanding defects should be brought to the attention of the premises management before issuing a Modification certificate.
- Any variations should be written down on the Modification certificate and justified.

Learner notes

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## Annexes of BS 5839-1