ECA
Excellence in Electrotechnical & Engineering Services

GUIDANCE Note

Technical Guidance

A General Guide to Assist with Design, Installation and Commissioning of Fire Warning Systems Conforming to BS 5839-6:2019+A1:2020+A1 2020 for Protection of Domestic Premises.

Contents

1. Overview

This guide is designed to assist those with a working knowledge of BS 5839-1:2017, to design systems for domestic premises conforming to BS 5839-6:2019+A1:2020+A1:2020.

It is important to remember that following a risk assessment and/or advice from the Fire & Rescue Service, insurers, building inspectorate, the user etc. a conclusion must be drawn regarding the correct category and grade of system to suit the risk.

Consideration must also be given to any potential for disability discrimination and unwanted or false alarms.

Only when the process of survey, consultation and risk assessment are properly concluded, can the appropriate system design & specification be prepared.

A specification for the proposed system should be prepared which clearly details the scope and extent of the works and states the category and grade of system.

If during discussion or negotiation with the user or the user's representatives the scope and extent of the works and/or the system category or grade are varied, then this should be clearly recorded.

2. Introduction

This guide relates to fire detection and fire alarm systems in domestic properties and all detail should be referenced from BS 5839-6:2019+A1:2020 *Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic properties*.

This should not be confused with the Code of practice for non-domestic properties BS 5839-1:2017, but as explained within the guide there is a clear relationship between the two standards.

3. Major changes

The following are a summary of the major changes from BS 5839-6:2013 to BS 5839-6:2019+A1:2020:

- removal of Grade B and Grade E;
- subdivision of Grade D and Grade F into Grade D1/Grade D2 and Grade F1/Grade F2, respectively;
- revision of Table 1;
- updating of guidance to take into account the publication of BS 5839-1:2017 and other standards published since the last full revision of BS 5839-6;
- new table on testing and servicing by grade;
- new recommendation to prevent blocking or delaying of fire alarm signals transmitted via social alarm systems in sheltered housing to an alarm receiving centre;
- increase in the recommended standard of protection in sheltered housing flats from Category LD2 to Category LD1;
- new recommendations for fire detection in supported housing;
- new recommendation that communal fire alarm systems should not normally be installed in purpose-built blocks of flats;

- Recommendation for Category LD2 and appropriate smoke detection in a loft with electrical equipment such as solar PV and other plant;
- revised and expanded recommendations for Grade C.

These are the principal changes, although there are many more that designers and installers should consider when undertaking any work to BS 5839-6:2019+A1:2020.

It is worth highlighting one of the major changes is an update to Table 1 in the Standard, entitled; ***Table 1*** *— Minimum grade and category of fire detection and fire alarm system for protection of life in typical premises.*

As can be seen from the title, this table sets out the minimum recommended grade and category for premises. This recommendation should not be classed as an alternate to the fire risk assessment.

Designers should familiarise themselves with this table and the updated recommendations.

4. System Categories

As with BS 5839 Part 1 System Designs, there is a need to specify a system category, based on a risk assessment. System categories are type LD for the protection of life and PD for the protection of property. As systems are rarely installed solely for protecting property, in the vast majority of cases systems will be designed and installed to an LD category.

4.1. Category LD1

A system installed throughout the dwelling incorporating detectors in all circulation spaces that form part of the escape routes from the dwelling and in all rooms and areas in which fire may start (such areas include roof voids unless it can be shown that there are no significant sources of ignition within the void and no readily combustible materials are stored within the void), other than toilets, bathrooms and shower rooms.

4.2. Category LD2

A system incorporating detectors in all circulation spaces that form part of the escape routes from the dwelling and in all rooms or areas that present a high fire risk to occupants (frequently the living room and kitchen). The rooms in which additional detectors need to be installed would normally be determined, where practicable, by a risk assessment.

Where solar panels, their associated plant and or boilers are installed in loft spaces an LD2 system would also require an appropriate fire sensor in the loft space.

4.3. Category LD3

A system incorporating detectors in all circulation spaces that form part of the escape routes from the dwelling, this may include the kitchen if this forms an escape route to a rear door. At least one fire sensor would need to be installed between the sleeping areas and the most likely sources of fire, for example the living room and kitchen.

4.4. Category PD1

A system installed throughout the dwelling incorporating detectors in all rooms and areas in which fire may start, other than toilets, bathrooms and shower rooms.

Where areas are disused without any stored combustible material and where electrical supplies are permanently disconnected such as a disused cellar, it may be acceptable to omit detection devices from these areas, subject to a risk assessment.

4.5. Category PD2

A system incorporating detectors only in defined rooms or areas of the dwelling in which the risk of fire to property is judged to warrant their provision. Where high value articles are stored in a particular area, it is highly likely that rooms or spaces on the periphery of that area and rooms of high fire risk will also need detectors to ensure early warning of fire is provided to enable firefighting to commence at an early stage.

5. System Grades

Under this part of BS 5839, a grade of system needs to be specified based on the relationship between the probability of the system operating correctly at the time of fire and the potential extent of harm to occupants of the dwelling if fire occurs (a risk assessment).

Grades of system range from ‘A’, the highest to ‘F’, the lowest. BS 5839-6:2019+A1:2020 has removed some Grades and split some others up into 2 distinct sections.

Detail associated with system grades can be obtained from a copy of BS 5839-6:2019+A1:2020 which is available from the ECA online Standards library. As a general guide the definition is as follows:

Note: In sheltered housing where detectors within dwellings are connected to the fire warning system in the common areas, addressable system technology should be utilised.

5.1. Grade A

For all intent and purpose the design, installation, documentation and certification should be the same as for a BS 5839 Part 1 system. Fire detectors and alarm sounders should be controlled and powered by control equipment conforming to British/European standards (BS EN 54-2 and BS EN 54-4).

Systems should be designed and installed to the recommendations of BS 5839-1:2017 Sections 1-5 inclusive, except those recommendations in the following clauses for which the corresponding clauses of this part of BS 5839 need to be substituted.

BS 5839-1:2017	Substituted by	BS 5839-6:2019+A1:2020
Clause 16: Audible alarms	➡	Clause 13: Audible alarms
Clause 18: Impaired hearing warning	➡	Clause 14: Impaired hearing warning
Clause 20: Manual call points	➡	Clause 18: Manual Call points
Clause 25.4e): Standby batteries	➡	Clause 15.2c) Standby batteries
Clause 27: Wireless Systems	➡	Clause 21: Wireless Systems

Self-contained smoke, heat or multi-sensor alarms cannot be used.

5.2. Grade B

Not defined in this standard

5.3. Grade C

A system of fire detectors and alarm sounders (which can be combined in the form of smoke alarms) connected to a common power supply comprising the normal mains and a standby supply, with a form of central control equipment. For example, this could be smoke alarms or heat alarms added to an intruder or social alarm system.

5.4. Grade D1

A system of one or more mains powered detection/alarm devices; each with an integral tamper resistant standby battery supply.

5.5. Grade D2

A system of one or more mains powered detection/alarm devices each with a user replaceable standby battery supply.

5.6. Grade E

Not defined in this standard

5.7. Grade F1

A system of one or more battery powered detection/alarm devices; each with an integral tamper resistant standby battery supply.

5.8. Grade F2

A system of one or more battery powered detection/alarm devices each with a user replaceable standby battery supply.

Grade F systems are only suitable for installation in existing single-family dwellings of no more than three storeys. (Not suitable for new or materially altered premises)

Note: For grades D and F systems where more than one detection/alarm device is installed, each detection/alarm device should be interlinked to provide a combined level of audible warning in the event of fire being detected.

6. Power Supplies

For grade A and grade C systems, mains supplies should be derived from an independent circuit at the dwelling's main distribution board. No other electrical equipment should be connected to this circuit. This would also be the preferred method of supply for Grade D systems.

The isolating protective device (for example a circuit breaker) should be labelled 'FIRE ALARM: DO NOT SWITCH OFF'.

The facility should be available for isolation of the mains supply, this should be labelled 'FIRE ALARM'.

There is no requirement for double pole isolation as safe isolation procedures should always be followed. Double pole isolation is, of course, permitted, but no longer mandatory.

Labelling should preferably be red letters on a white background or white letters on a red background.

6.1. System Grade A

The standby supply should be sufficient to maintain the system for a minimum of 72 hours and be capable of supporting the maximum alarm load for 15 minutes thereafter. Where there is a permanent connection to an alarm receiving centre or where staff is available on site 24/7, the standby supply capacity may be reduced to 24Hours.

System components should conform to the relevant part of: BS EN 54

6.2. System Grade C

The standby supply should be sufficient to maintain the system for a minimum of 72 hours and be capable of supporting the maximum alarm load for 4 minutes thereafter.

In practice this will normally mean that if an intruder alarm panel) is used as control equipment for a grade 'C' system, power supplies will need to be upgraded.

Subject to the agreement of the relevant parties and fire safety legislation enforcers, it may be considered appropriate to agree a variation if the intruder alarm is permanently connected to an alarm receiving centre and any mains fail condition is reported.

In houses of multiple occupancy with a permanent landlord supply in common areas but with pre-payment meters in dwelling units, the mains supply should be derived from the landlord's permanent supply.

Detector/alarm devices should conform to: BS EN 14604

6.3. System Grade D

The power supply should consist of a single independent and dedicated supply from the main distribution board in the dwelling in which case no other electrical equipment should be connected to this circuit, other than the supply to a dedicated social alarm control unit.

Where mains powered Carbon Monoxide Alarms which conform to BS EN 50291 and are installed to BS EN 50292 form part of a manufacturers fire and safety package, these may be combined with the fire alarm components where the manufacturer of all the components make that recommendation.

A regularly used local lighting circuit with separate electrical protection may also be used to supply detection/alarm devices providing there is a means to isolate detection/alarm devices for maintenance purposes (typically a key operated double pole isolator labelled “FIRE ALARM” that is suitable for isolation).

Where a house of multiple occupancy has a single key or card operated meter the mains supply for the detection/alarm devices may be served by the meter. However, where the accommodation of each resident is served by a separate or key card operated meter the detection /alarm devices should not be supplied via the meter of any resident.

The standby supply for detection/alarm devices should be provided by an integral battery.

The capacity of the battery should be capable of powering the detection alarm device in the quiescent mode for at least 72 hours on mains failure whilst giving an audible or visual warning of power failure, after which sufficient capacity should be available to provide a fire warning for at least 4 minutes. In the absence of fire, a fault warning should be active for at least 24hours.

Detector/alarm devices should conform to: BS EN 14604

6.4. System Grade F

Typically, the batteries of detection/alarm devices should be capable of supplying the quiescent load of the detection device and the additional alarm load due to routine weekly testing for at least one year before the battery fault warning is given.

Once the battery fault warning is given it should be supported for at least 30 days and the smoke/heat alarm must be capable of providing a fire alarm warning for at least 4 minutes during this period.

Detector/Alarm devices should conform to: BS EN 14604

7. Installation Wiring

For all wiring, consideration must be given to protecting cable against abrasion, impact or rodent damage and all cables must be properly secured with metal fixings.

In practice this may mean fitting capping under plaster or installation of cables in plastic trunking or conduit with metal fixings where appropriate.

If in doubt, reference to BS 7671 should be made to ensure that the wiring meets the necessary electrical safety requirements.

7.1. Grade A

Installation wiring should be conducted in fire resisting cable. As many dwellings will be relatively small, 1 mm^2 cable should be suitable in most cases, however this would be subject to typical electrical design scrutiny. For large dwellings and country mansions, a minimum of 1.5 mm^2 cable should be used, to minimise the potential for volt drop on a detection loop or at the end of a radial circuit.

7.2. Grade C

Installation wiring should be conducted in cable suitable for the current and voltage of the circuits concerned, if in doubt, refer to BS 7671.

In practice this may be multi-core cable with a pair being used to provide power to the devices and a separate signal pair.

The correct use of colour coding to distinguish the cores of cables supplying power from those acting as signal pairs is clearly important and should be recorded in documentation.

7.3. Grade D

Installation wiring should be conducted in cable suitable for the current and voltage of the circuits concerned, if in doubt, refer to BS 7671.

In practice this would comprise any cable suitable for domestic mains wiring.

1 mm^2 PVC/PVC twin + cpc cable would provide the supply to the first device and thereafter 1 mm^2 3 core + cpc would normally be used to interconnect the devices.

For large dwellings and country mansions, a minimum of 1.5 mm^2 cable should be used, to minimise the potential for volt drop on a detection loop or at the end of a radial circuit

The correct use of colour coding to distinguish the cores of cables supplying power from those acting as signal pairs is clearly important and should be recorded in documentation.

7.4. Grade F

Any cable suitable for the voltage and current concerned may be used to interconnect battery powered devices.

8. Location of Control and Indicating Equipment, where applicable

Control and indicating equipment should be sited between 1.35 m - 1.45 m above finished floor level, on the same level or floor as the main entrance to the dwelling, and close to that entrance.

In single family dwellings and those shared by no more than six people, control equipment may be mounted in a cupboard, perhaps under the stairs.

In other dwellings, control and indicating equipment should be mounted in a common circulation area close to a door where the Fire and Rescue Service would normally enter the building.

9. Manual Call Points

In a small single-family dwelling, manual alarm call points are not normally necessary if a shouted warning of ‘Fire’ can easily be heard throughout the premises.

In large country houses, mansions or premises of multiple occupancy, manual alarm call points are of benefit and should be installed at all principle exits to open air, all storey exits and on escape routes where it would otherwise be necessary to travel more than 45 m to a manual call point located at an exit or storey exit.

Call points where deemed necessary should be installed 1.2 m above finished floor level, to the mid-point of the frangible element.

Manual call points should be fitted with a protective cover to minimise the possibility of unwanted alarms due to accidental operation.

10. Alarm Warning

The alarm warning would normally be given audibly, supplemented by visual indication and/or vibrating pads under pillows and/or vibrating pagers, where the risk assessment results show it would be appropriate.

The fire alarm warning should be clearly distinguishable from any other form of warning device or alarm system in the premises.

As a rule, a sound pressure level of at least 85 dB (A) should be achieved at the doorway to each bedroom, with the door open, irrespective of where fire is detected within the dwelling.

In some houses of multiple occupancy; a risk assessment may determine that a higher sound pressure level of 75 dB (A) at the bedhead is required for each bedroom or perhaps certain specified bedrooms.

Visual warnings must be perceptible through all principle habitable rooms where deaf or hard of hearing people may be present and these may need to be supplemented with vibrating pads under pillows in bedrooms and/or vibrating pagers.

The key is to ensure that no one is exposed to undue risk from fire because of inadequate means of warning.

11. System Zoning

In most typical single-family dwellings, the sub-division of the dwelling into detection zones for indication purposes is unnecessary, however where multiple smoke/heat alarms are employed a device location chart may be appropriate for device identification and maintenance purposes.

Where a house is one under multiple occupations there should be a means of identifying the dwelling unit from which a fire signal originates. In larger (where any floor area exceeds 100 m^2), more complex properties, or where accommodation is on more than two levels, each floor should be treated as a separate detection zone. The potential for system zoning is only available for grade A, and in some instances, grade C systems. For all other grades where multiple devices are employed a device location chart would be appropriate, to assist the occupier and for system maintenance.

12. Remote Transmission of Alarm Signals

In most dwellings, automatic transmission of fire alarm signals to the Fire & Rescue Service via an alarm receiving centre is unnecessary, as it is usually sufficient for the Fire & Rescue Service to be summoned by occupants using the 999-emergency call system.

There are certain circumstances in which automatic transmission of fire signals to the Fire & Rescue Service is warranted, typically:

- Where occupants are sufficiently mobility impaired, frail or very young
- If the occupants suffer from a disability (for example: speech impairment) which could preclude communication by telephone
- A sufficiently complex house of multiple occupations where knowledge of who is in or out may be difficult to determine in an emergency
- Where properties or their contents are of very high value (this may be a requirement imposed by an insurer)
- Sheltered Housing

In all cases where automatic remote transmission of alarm signals is implemented, it is always important to use the 999 system as well, as a back-up, wherever possible.

Only system grades A and C may be considered for connection to the Fire & Rescue Service except for a grade D system installed within sheltered or supported housing.

In every instance where a BS 5839-6:2019+A1:2020 system is connected to the Fire & Rescue service via an alarm receiving centre the occupier or landlord should be provided with written guidance relating to the importance of avoiding unwanted alarms, suitable measures to avoid unwanted alarms and the possible need for the Fire and Rescue Service to force entry into the premises in the event of an unwanted alarm when the premises are unoccupied. Written guidance which provides this information must be included with the specification/proposal and be provided as part of the system handover documentation.

13. Minimising Unwanted/False Alarms

Unwanted alarms in dwellings are far more frequent than those in the workplace. Many deaths and serious injuries have resulted where smoke alarms have been disabled by householders due to the annoyance of persistent unwanted alarms. While it is not possible to prevent all unwanted alarms, the vast majority can be avoided by good system design and conscientious system maintenance:

The most common causes of unwanted alarms in dwellings are:

- Cooking fumes
- Burning toast
- Steam (bathrooms, shower rooms, kitchens)
- Tobacco smoke
- Dust (built up over time, or generated when cleaning)
- Insects
- Aerosols (hairspray, deodorant, cleaning fluid)
- Smoke from elsewhere (bonfires, barbeques)
- Hot work (burning off paintwork)
- Incense
- Candles
- High humidity
- Water ingress

Choice and location of an appropriate sensor at design stage, combined with user awareness and good maintenance can avoid most of these causes.

14. Radio Linked Systems

A comprehensive radio survey must be undertaken at design stage for a radio linked system, to ensure optimum performance. Acceptable signal levels must fall well within manufacturers' guidelines (not border line).

The signal levels measured should be maintained in the job file. Once installed, signal levels should be measured again and checked to confirm they are comparable with those at design stage. The final readings should be recorded in the system documentation.

While a properly designed radio-linked system is not likely to be any more susceptible to unwanted alarms than a wired system, it must be recognised that commissioning, testing and unwanted alarms all contribute to a reduction in life of fire sensor and alarm sounder batteries.

Check with manufacturers to ensure that considering:

- The quiescent load of the device
- The additional load resulting from routine weekly testing
- An additional load based on two unwanted alarms per smoke detector per annum of five minutes duration.

Each device must be supported by its battery supply for at least five years before any impending battery failure warning is given.

Record in the system documentation a recommended date when all battery packs should be renewed. This would normally be not less than three years and not more than five. In practice, service history associated with system performance will determine the actual battery life.

15. Installation and Commissioning

As a rule, installation and commissioning practice would be similar to that for BS 5839 Part 1 systems, taking into consideration the following:

a) Only cables with a manufacturer's voltage rating suitable for mains use should be subject to insulation testing (system components, for example smoke detectors, controllers etc,

must not be connected at the time of testing). Insulation testing at 500 V DC must record an insulation resistance of at least 2 MΩ

b) Cables should be suitable supported, in some cases this would require metal supports

c) All batteries within control equipment, including dry cell batteries in smoke alarms and power packs for radio linked systems, must be clearly labelled with the date of installation.

16. Certification and Documentation

For grade “A” systems use the same certificates we use for a BS 5839-1:2017 system but replace the Design Certificate with Model Certificate D1 from Annexe D of BS 5839-6.

For all other grades of system only use the Model Certificate in Annexe E for Design, Installation and Commissioning.

It is always important to generate your own form of Acceptance Certificate for the user or the user’s representative to sign to confirm that they have witnessed system testing, received appropriate instruction and documentation on the system and accepted that the quality of workmanship is satisfactory.

System documentation including drawings, system manuals and data sheets should be prepared and provided in the same manner as for a BS 5839-1:2017 system.

Note: Pages 23-25 of BS 5839-6:2019+A1:2020 provide useful guidance on the grade and category of system to be used for specific property types.

This guide is only provided as a ‘rule of thumb’. For detailed information refer to BS 5839-6:2019+A1:2020 which is available from the ECA online standards library.

Health & Safety and Information Gathering

During the first and any subsequent visits to site and discussions with the customer, enforcing authorities or influencers, please take time to gather as much information (drawings in particular) as possible to assist system design, work practices and any special considerations associated with a particular property

An effective survey will enable the system design and installation to be completed as comprehensively and accurately as possible.

Information gathering also needs to consider the practicalities associated with ongoing preventive and corrective maintenance to ensure the system is maintained in effective working order throughout its operational lifetime.

Experience has shown that children might not be woken by fire alarm tones. It is important that children are never left alone in a dwelling. Families should have a fire escape plan that is regularly rehearsed, so that everyone is familiar with the means of escape if fire occurs. The immediate priority when fire occurs is to ensure that any sleeping children are woken from sleep and are immediately taken to a place of safety outside the property, together with all other occupants. The Fire and Rescue Service should always be called without delay, no matter how small the fire may appear.

Note: Please remember to issue the guidance to occupiers and landlords similar to that in the Annex attached both at the time of quoting and on completion of the handover documentation.

Appendix 1: Fire risk assessment checklist

Fire Risk Assessment Checklist

TRADE, BUSINESS or DOMESTIC	***Make a note of your findings***
Consider the number of floor levels and means of escape. Is there a basement? Is there a place of relative safety (e.g. garden, car park)? Are hallways, corridors, stairways clear of furniture, stock or rubbish? Do people share the premises? Who is in charge?	
AREA	***Note your findings and contact numbers for fire prevention officers/insurers/building inspectors***
Consider the location of your home or business. What's the crime rate? Low, medium, high, very high? Are you a potential target for arson? Are your premises isolated, in a rural area or inner city? What's the approx. Fire & Rescue response time?	
HAZARDS	***List what could start fire and what could burn***
How could a fire start? Electrical equipment, naked flame, welding, cigarettes, heaters, lighting, cookers, hot process (e.g. soldering, roofing, plumbing). What will burn? Furniture, carpets, curtains, packaging, rubbish, petrol, oil, paint. Are walls or ceilings lined with combustible material?	
PEOPLE	***Note who is at risk, who is particularly at risk, and why***

If there is a fire everyone in the premises will be at risk. Think especially of the young, the old and the disabled. Consider visitors who will not be familiar with the premises. Think about the volume of people, who could be in the premises at any one time, consider their location in relation to any particular risk.	
PROTECT PEOPLE AND PREMISES	***List what actions you have taken***
How will you know there is a fire? How do you warn others? Who ensures everyone gets out? Who calls the Fire & Rescue Service? Are people trained to extinguish small fires? Are escape routes and assembly points planned? Can people find their way if it's dark? Is safety equipment maintained? Does all safety equipment work?	
GOOD HOUSEKEEPING	***List what actions you have taken***
Are sources of ignition kept away from potential fuel? Are escape routes clear? Have you removed any rubbish or fuel an arsonist could use? Do you practice fire drill? Do you log all incidents/fire drills/maintenance? Have you consulted others who share premises with you?	

Record your findings and review them annually, or more frequently if the building structure, or use, is changed. Should you have a fire or close call, re-consider your assessment – was it adequate? Consider at the outset, do you need to employ a professional Fire Risk Assessor?

This checklist is intended to provide a structure for information gathering. Additional information may be necessary to satisfy regulatory requirements.
If in doubt check with the Fire and Rescue Service.

Appendix 2: Guidance to occupiers and landlords responsible for domestic properties with remotely monitored fire warning systems with reference to BS 5839-6:2019+A1:2020

IMPORTANT: You must read this guidance before your fire alarm system is monitored at a remote location.

Your fire alarm provider has proposed that the system will be monitored at a remote location.

Remote monitoring of the system means that, when your fire alarm system sounds the alarm, the system automatically causes the Fire and Rescue Service to be called (usually by staff at an alarm receiving centre). This service is often valuable if the people who live in your property have a disability, are old, frail or very young and so might not be able to call the Fire and Rescue Service themselves or get out of the property safely. It might also be required by your fire insurers if you live in a very expensive house, such as a mansion or country house.

In other properties, the monitoring service may have limited benefit, as people in your property can usually call the Fire and Rescue Service themselves, provided they do so from a place of safety, such as a telephone on the ground floor, near the front or back doors, or at a neighbour's house. Unless you live in an isolated location, if your house catches fire when you are not there, often neighbours will call the Fire and Rescue Service.

If your fire alarm system is monitored, it is very important that you do everything possible to avoid the Fire and Rescue Service being called to your property as a result of a false alarm.

Nearly 30% of fire calls that the Fire and Rescue Service receive each year are caused by false alarms from fire alarm systems. This is very costly for the taxpayer, and, in rural areas, often causes part-time firefighters to be called out from their homes or places of work. Most false alarms come from workplaces, such as offices, shops, factories, hotels, hospitals, colleges, etc, and not from private houses. This is because most houses do not have fire alarm systems that are monitored at alarm receiving centres or Fire and Rescue Service control rooms.

However, a problem is that each smoke detector in a house is usually more likely to cause a false alarm than a smoke detector in a workplace. There are good reasons for this. In the small confines of a house, fumes from the kitchen, people smoking, steam, dust, aerosol sprays and some do-it-yourself or maintenance work (e.g. causing dust or involving use of blowlamps) can set of smoke detectors (but normally not heat detectors).

The Fire and Rescue Service understands these problems. If they are called to a false alarm at your house, they will not be annoyed, nor will you be charged any fee for their call out. However, for your safety, they will always assume that any call to your property results from a genuine fire and react accordingly. In travelling to your property as fast as possible, the firefighters put themselves and other road users at additional risk. More importantly, while attending a false alarm at your property, the fire engines are not available to deal with other real fires in the area, and this puts other people at risk.

There are many things you can do to avoid false alarms and unnecessary calls to the Fire and Rescue Service. These are set out below. Make sure you understand these measures if you

wish your fire alarm system to be monitored at a remote location. If you need advice, contact your alarm provider, or your local Fire and Rescue Service.

1) Unless you need the Fire and Rescue Service to attend with the minimum of delay because you are disabled or because your fire insurer requires this, a short (usually no more than two minutes) delay should be allowed for you to check whether there is a fire before the call is passed automatically to the Fire and Rescue Service. (People in the property should not, however, delay calling the Fire and Rescue Service if they even suspect that there is a fire.)

   Normally the delay is applied by the alarm receiving centre, who will try to telephone you to check whether the signal they have received from your system is a false alarm. If you do not answer the telephone within 60 seconds, the alarm receiving centre will assume that there is a fire and call the Fire and Rescue Service. If you are certain that it is a false alarm, you should answer the telephone as quickly as possible, so that the alarm receiving centre does not call the Fire and Rescue Service. On the other hand, if there is a fire, you should not delay leaving the house to answer the telephone. You should get out right away and telephone the Fire and Rescue Service yourself just in case the automatic transmission system has not worked properly.

   In some sophisticated fire alarm systems, the delay is not applied at the alarm receiving centre. Instead, you will have a short period (normally no more than two minutes) to check whether there is a fire. If there is no fire, you can stop the signal being sent to the alarm receiving centre by using a control on your fire alarm control panel. If you do not stop the signal, the Fire and Rescue Service will be called without further delay as soon as it is sent. If you have this type of system, you should make sure that you understand how to use the ‘abort’ control

   If you have any doubts about the way your system operates, whether you have, or should have, a delay period, or any other uncertainty, you should contact your alarm provider as soon as possible.

2) So that faults in your system do not cause false alarms, you must have it serviced at least every six months. You should check that you have a current contract for servicing and for call-out of an engineer if your system is faulty

3) There may be a switch on your fire alarm panel that allows you to disable the automatic transmission facility at certain times (e.g. if you find that cooking is likely to cause false alarms). If there is not such a switch, there might be a facility to disable the fire detectors. However, you should then ensure that the system is restored to normal operation as soon as the risk of false alarms no longer exists.

4) When cooking, you should make sure that fumes from the kitchen do not reach a nearby smoke detector (e.g. by shutting the kitchen door). You should also make sure that steam (e.g. from a bathroom) does not reach any smoke detector.

5) There are usually two types of smoke detector, called ionization smoke detectors and optical smoke detectors. Optical smoke detectors are less likely to cause false alarms during cooking. You should make sure that the smoke detectors near the kitchen (which means smoke detectors installed in both the hallway and upstairs landing of a typical two-storey house) are of the optical type. These sensing elements may occur within

multi-sensor detection devices. If you are not sure, you should ask your alarm provider to confirm this.

6) If people are smoking in a room with a smoke detector, make sure that the room is ventilated, so that the smoke does not reach the smoke detector. (This does not matter if the room has a heat detector.)

7) Some aerosol sprays can set of smoke detectors. You should not spray any aerosol close to a smoke detector.

8) If a lot of dust is being generated (e.g. by builders), you should protect smoke detectors from the dust (e.g. by covering them with a plastic bag). You should, however, remove this as soon as the work that is causing the dust if finished. If someone is using a blowlamp (e.g. to burn off paint) near a smoke detector), you should disable the automatic transmission facility or the smoke detectors (but restore the system to normal operation as soon as the work is finished).

9) Carbon Monoxide sensors may be set off by vehicle exhaust fumes and may produce false alarms if installed in a poorly ventilated kitchen.

REMEMBER

- Always make sure that someone in the house calls the Fire and Rescue Service when there is a fire. Do not rely purely on the automatic transmission facility.
- Plan a suitable means of escape in an emergency.
- Make sure everyone in the house knows how to prevent false alarms.
- Make sure your system is serviced properly.
- If there is anything about the system, or how to avoid false alarms, that you do not understand, please contact your fire alarm provider.

Should you have any doubts as to whether the system installed is appropriate for your property, suitable to minimise unwanted alarms and capable of providing prompt warning in the event of a genuine fire, please discuss with your fire alarm provider, the Fire and Rescue Service, Building Control and/or reference BS 5839-6:2019+A1:2020.

ECA, Rotherwick House, 3 Thomas More Street, St. Katharine's & Wapping, London E1W 1YZ
Tel: 020 7313 4800 **Email**: info@eca.co.uk **www.eca.co.uk**