

# **Tolerable Standard Guidance: Satisfactory Fire and Carbon Monoxide Detection**

## **Chapter 16: Satisfactory Fire Detection**

## Chapter 16 Satisfactory Fire Detection

16.1. A house meets the Tolerable Standard if it complies with the relevant requirements in relation to satisfactory smoke and heat alarms.

### Introduction

16.2. The Tolerable Standard is amended by the Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criteria) Order 2019 and now includes this new element covering smoke and heat alarms. For the first time, assessors will consider the presence, type and condition of smoke and heat alarms in a house when deciding if the house meets the Tolerable Standard. These criteria, which already formed part of the Repairing Standard (as it applies to certain tenanted properties), now apply to all houses **[see note 1]**.

16.3. This chapter of the guidance aims to provide the information and advice needed to carry out an assessment of the smoke and heat alarms in a house for the purposes of the Tolerable Standard. The methodology is based on the normal walk-through survey used for other elements of the Tolerable Standard, with the potential for support from a qualified specialist.

### Legislation

16.4. The Tolerable Standard was first defined in the Housing (Scotland) Act 1969 which was then repealed and replaced by the Housing (Scotland) Act 1987. The Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criteria) Order 2019 added fire detection equipment to the Tolerable Standard. This is in recognition of the danger that fire poses to the occupants of a house, and is intended to reduce the risk of loss of life, injury and damage to property in the event of fire. The Tolerable Standard also forms part of the Repairing Standard under section 13 of the Housing (Scotland) Act 2006. Under section 14 of the 2006 Act, the landlord in a tenancy must ensure that the house meets the Repairing Standard at the start of the tenancy and at all times during the tenancy.

### Definitions

16.5. The revised Tolerable Standard includes criteria requiring that a house has 'satisfactory equipment installed for detecting, and for giving warning of, fire or suspected fire'. The Scottish Government considers that this aspect of the Tolerable Standard should be complied with via the installation of satisfactory smoke and heat alarms. This guidance defines what is 'satisfactory' by setting out the requirement for **[see note 2]**:

- one smoke alarm installed in the room most frequently used for general daytime living purposes (normally the living room/lounge) **[see note 3]**;
- one smoke alarm in every circulation space on each storey, such as hallways and landings **[see note 4]**;
- one heat alarm installed in every kitchen;
- all smoke and heat alarms to be ceiling mounted; and
- all smoke and heat alarms to be interlinked **[see note 5]**.

16.6 Mains-operated alarms (with battery backup) are permitted, and tamper proof long-life lithium battery alarms (i.e. not PP3 type or user-replaceable) are also permitted [**see note 6**]. Alarms should be regularly maintained and tested in accordance with manufacturer's instructions.

16.7. **Smoke alarm:** A fire detector that detects smoke as a primary indication of fire. It produces an audible and/or visible signal locally in a room or a home. Smoke alarms are usually housed in a small, round shaped plastic case, and ceiling mounted. Smoke alarms should conform to BS EN 14604. For more detailed information on smoke alarms, see BS 5839 Part 6.

16.8. **Heat alarm:** A fire detector that detects the presence of fire by monitoring the changes in temperature associated with combustion. It produces an audible and/or visible signal locally in a room or a home. Heat alarms should conform to BS 5446-2. For more detailed information on heat alarms, see BS 5839 Part 6. In a fire, heat alarms operate later than smoke alarms, so their use should be restricted to rooms in which smoke alarms would cause false alarms (e.g. kitchens). [**see note 7**].

16.9. **Multi-sensor alarm:** A fire detector that detects the presence of fire by monitoring more than one phenomenon of fire (e.g. smoke and heat). Multi-sensor alarms should conform to BS EN 54-29 or BS EN 14604.

16.10. **Ceiling mounted:** All smoke and heat alarms should be ceiling mounted, unless otherwise indicated as suitable for wall mounting in spaces of limited area (e.g. hallways) by the manufacturer [**see note 8**].

16.11. **Interlinked:** Interconnected alarms which communicate with each other and form an integrated system of protection in the home, so that when one alarm detects a fire, all alarms operate simultaneously. Alarms can be interlinked via wires (hardwired) or wirelessly (by radio communication). Where adding to an existing hardwired system, care should be taken to ensure that all alarms are interlinked, with all alarms sounding when any one device is activated. [**see note 9**]

### **Making the assessment**

16.12. In some buildings, it may not be practical to fit heat and smoke alarms to this exact standard. There may be instances where the number of alarms specified would not be required to meet the standard, such as a kitchen/diner or open plan layout. Assessors should take account of the layout and design of the building, and any advice given by a competent person. Further information can be found in the Building Standards Domestic Technical Handbook.

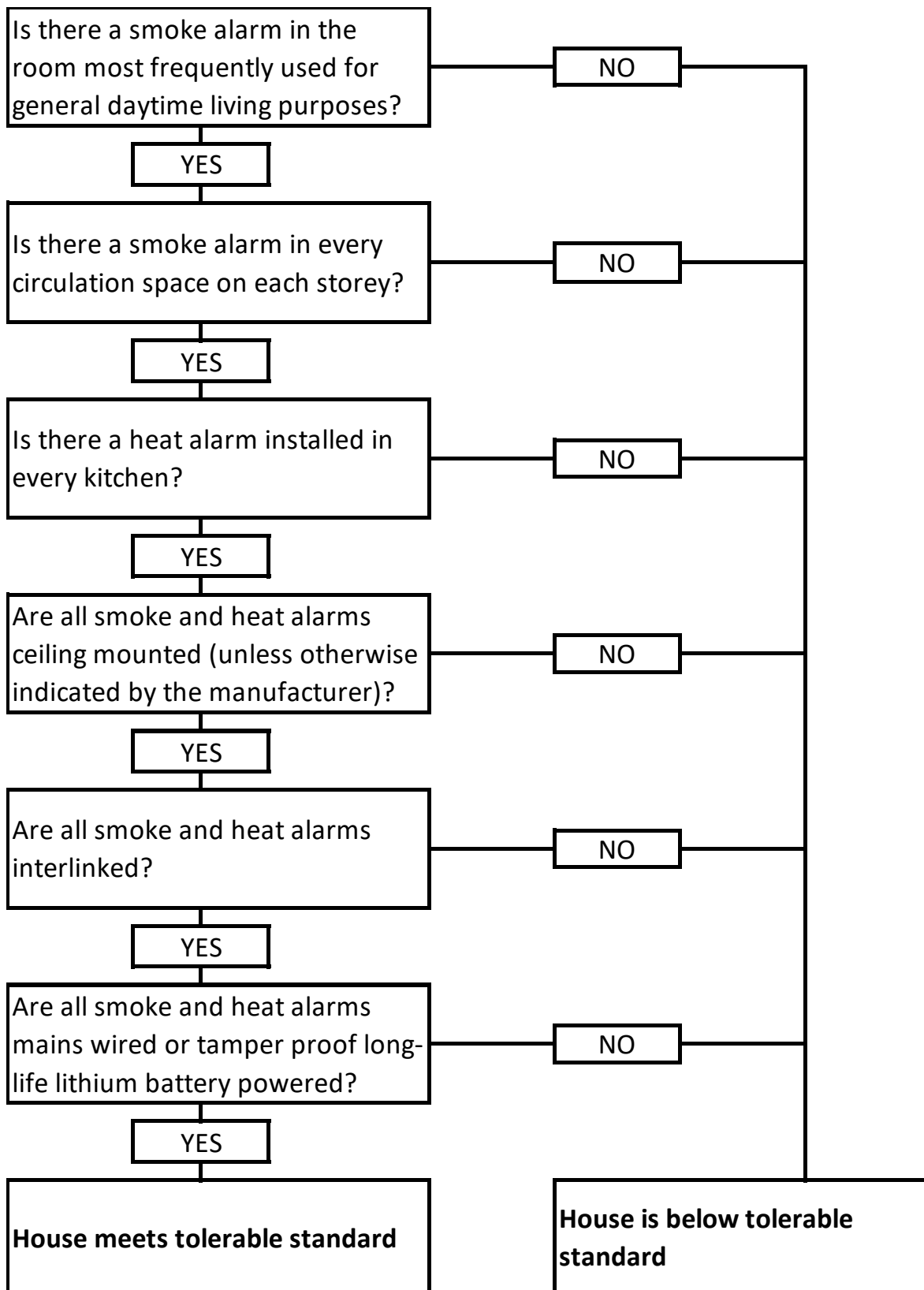
16.13. Local authorities may use their statutory powers to require owners to carry out work on substandard housing. However, as is the case for other elements of the Tolerable Standard (e.g. serious structural problems through to other failures such as insufficient loft insulation), it is expected that any intervention is proportionate, rational and reasonable. Local authorities are to consider the cost of any intervention alongside the cost of assisting owners to bring their property up to the minimum standard for satisfactory fire detection. As a general rule it is preferable that owners should carry out necessary works on a voluntary basis rather than as a

result of enforcement action, with further information set out in **Chapter 2 – local authority powers**.

16.14. Recent cases in the sheriff court support the view that local authorities have to consider carefully which enforcement powers are appropriate to address a failure in meeting the Tolerable Standard and careful investigation must be carried out as to the cause of the failure as well as engagement with the owners.

16.15. The next part of this chapter gives advice for assessors on making judgements on this element of the Tolerable Standard.

16.16. The flow chart below will help guide an assessor through the process of determining whether the house has smoke and heat alarms which meet the Tolerable Standard. This should be followed in the absence of any technical advice provided against fitting to the standard.



## Notes

The following notes have been added to clarify some technical points in Chapter 16 of this guidance:

1. The Tolerable Standard (as detailed in section 86 of the 1987 Act) applies to all houses. For guidance on fire safety standards in non-domestic residential property see <https://www.gov.scot/policies/fire-and-rescue/non-domestic-fire-safety/>.”

2. The Tolerable Standard is a minimum standard, and does not preclude more effective or extensive systems provided that they meet the basic requirement of (a) a secure power source for the lifetime of the unit, and (b) effective means to provide an immediate alert in the event of any part of the system being actuated.

In particular, the Standard can be met by the use of Grade A or Grade C alarms which should be installed in compliance with BS 5839-6. Grade A alarms are smoke, heat and multi-sensor detectors; Grade C alarms are smoke, heat and multi-sensor detectors along with devices such as fire alarm sounders, visual and/or vibrating alarm devices.

Additional standards may apply if work is carried out under a building warrant or where an electrician is installing mains-wired alarms.

See also note 9 below.

3. Open plan combined rooms, such as kitchen/living rooms will only require one alarm, provided that it can be located no more than 7.5 metres from any point in the room. The type of alarm used should be appropriate for the room, see note 7.

4. A “circulation space” is a room that you have to go through to get to another part of the house. This does not require alarms in small spaces such as a vestibule, front porch or half-landing with no or minimal space for furniture, storage or appliances.

In order to provide effective warning, there should be an alarm on a landing or hall located no more than 3 metres from the door of the main bedroom. See Building Standards Technical Handbook: Domestic, section 2.11.7,

<https://www.gov.scot/publications/building-standards-technical-handbook-2020-domestic/2-fire/2-11-communication/>.

5. All the alarms required to provide a compliant system must be interlinked. If there are additional alarms that are not required by the Tolerable Standard, for example, in bedrooms, the system does not fail the Tolerable Standard if these additional alarms are not interlinked to the system.

6. The requirement is for the main power supply to the unit. Mains-wired units may have a back-up supply in case of a power cut, and wireless interlinking may use a separate power supply for the radio signal. Alarms will not be below Tolerable Standard if these additional supplies use replaceable batteries.

7. The Tolerable Standard does not require a heat alarm and a smoke alarm. Whichever type is most appropriate should be used. Because heat alarms are less sensitive than smoke alarms, they should be used only where there is a risk of false

alarms from cookers, open fires, or other appliances. BS 5839-6:2019, Clause 12.2(f) states that only heat alarms should be used in kitchens. However, if an existing alarm system includes a smoke alarm in a kitchen, it is not necessary to replace this until the alarm reaches the end of its manufacturer's recommended lifespan.

8. Wall mounted alarms should only be installed where this is in accordance with the manufacturer's recommended installation. Alarms on walls should be located within 30 cm of the ceiling at its highest end. Wall mounting may be appropriate where ceilings are sloped or uneven, or in order to avoid disturbing asbestos.

9. Under the Equality Act 2010, deaf people can expect the same level of protection from fire as specified in this guidance through provision of specialist deaf alerts. For homeowners these may be provided by Health and Social Care Partnerships. Specialist deaf alerts must be compatible with the new interlinked systems to avoid multiple alert systems within properties and to ensure a single system arrangement consistent with the level of protection required for those who are not deaf.

Landlords have a duty to make reasonable adjustments to properties for disabled people. Therefore, they require to provide deaf alerts compatible with the new interlinked systems.

Where telecare is in use, effective warning interlinked smoke and heat alarms should be installed which are compatible with any telecare alarms, and connected to the telecare system, ensuring a single system approach.

## Chapter 17 Satisfactory Carbon Monoxide Detection

17.1. A house meets the Tolerable Standard if it complies with the relevant requirements in relation to satisfactory carbon monoxide (CO) alarms.

### Introduction

17.2. The Tolerable Standard is amended by the Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criteria) Order 2019 and now includes this new element covering CO alarms. For the first time, assessors will consider the presence, type and condition of CO alarms in a house when deciding if the house meets the Tolerable Standard **[see note 1]**. These criteria, which already formed part of the Repairing Standard (as it applies to certain tenanted properties), now apply to all houses.

17.3. This chapter of the guidance aims to provide the information and advice needed to carry out an assessment of CO alarms in a house for the purposes of the Tolerable Standard. The methodology is based on the normal walk-through survey used for other elements of the Tolerable Standard, with the potential for support from a qualified specialist.

### Legislation

17.4. The Tolerable Standard was first defined in the Housing (Scotland) Act 1969 which was then repealed and replaced by the Housing (Scotland) Act 1987. The Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criteria) Order 2019 added fire and CO detection equipment to the Tolerable Standard. This is in recognition of the danger posed to the occupants of a house by CO in concentrations hazardous to health, and the vital role early detection and warning in buildings can play in the protection and safety of the occupants. As noted above, the Tolerable Standard also forms part of the Repairing Standard, under section 13 of the Housing (Scotland) Act 2006, which landlords must comply with under section 14 of that Act.

### Definitions

17.5. The revised Tolerable Standard includes a criterion requiring that a house has 'satisfactory equipment installed for detecting, and for giving warning of, carbon monoxide present in a concentration that is hazardous to health'. This guidance defines what is 'satisfactory' by setting out the requirement for:

- CO detectors to be fitted in all rooms **[see note 2]** where there is a fixed combustion appliance (excluding an appliance used solely for cooking **[see note 3]**) or a flue.

17.6. **CO detector:** A device that detects the presence of CO in a concentration that is hazardous to health, giving an audible, and in some cases visible, warning. CO detectors should comply with BS EN 50291 and be powered by a battery designed to operate for the working life of the detector. The detector should incorporate a warning device to alert the users when its working life is due to expire. Hard wired mains operated CO detectors complying with BS EN 50291 (Type A) with fixed wiring (not plug in types) may be used as an alternative, provided they are fitted with



a sensor failure warning device. The detector should be regularly maintained and tested in accordance with the manufacturer's instructions.

**17.7. Combustion appliance:** a fixed appliance (such as boilers, fires (including open fires), heaters and stoves) designed and installed to operate on a carbon based fuel (i.e. oil, solid fuel or gas).

17.8. All CO detectors should be either:

- ceiling mounted and at least 300 mm from any wall (unless otherwise indicated by the manufacturer) or
- wall mounted and positioned at least 150 mm below the ceiling and higher than any door or window in the room (unless otherwise indicated by the manufacturer). **[see note 4]**

17.9. Combined smoke/CO detectors may be installed, providing they meet the appropriate requirements of BS EN 50291 with regard to CO detection/alarm activation and the requirements of BS EN 14604 with regard to smoke detection/alarm activation. **[see note 5]**

### **Making the assessment**

17.10. In making an assessment, assessors should take account of the layout and design of the building, and any advice given by a competent person. Further information can be found in the Building Standards Domestic Technical Handbook.

17.11. Local authorities may use their statutory powers to require owners to carry out work on substandard housing. However, as is the case for other elements of the Tolerable Standard (e.g. serious structural problems through to other failures such as insufficient loft insulation), it is expected that any intervention is proportionate, rational and reasonable. Local authorities are to consider the cost of any intervention alongside the cost of assisting owners to bring their property up to the minimum standard for satisfactory carbon monoxide detection. As a general rule it is preferable that owners should carry out necessary works on a voluntary basis rather than as a result of enforcement action, with further information set out in **Chapter 2 – local authority powers**.

17.12 Recent cases in the sheriff court support the view that local authorities have to consider carefully which enforcement powers are appropriate to address a failure in meeting the Tolerable Standard and careful investigation must be carried out as to the cause of the failure as well as engagement with the owners.

## Notes

The following notes have been added to clarify some technical points in Chapter 17 of this guidance:

1. The Tolerable Standard is a minimum standard, and does not preclude additional carbon monoxide detectors.

Additional standards may apply if work is carried out under a building warrant or where an electrician is installing mains-wired alarms.

2. This guidance applies to rooms, meaning parts of the house that are used for living accommodation. A house does not fail the Tolerable Standard if there is no carbon monoxide detector in a part of the house that is not used as, or has not been converted for use as, living accommodation, such as cellars, attics and garages. However, if a new carbon fuelled appliance is installed, or an existing appliance replaced, Scottish Building regulations must be complied with and may require the installation of a carbon monoxide detector (see Building Standards Technical Handbook: Domestic, section 3.20.20, <https://www.gov.scot/publications/building-standards-technical-handbook-2020-domestic/3-environment/3-20-combustion-appliances-removal-products-combustion/>).

3. A carbon monoxide detector is not required for a gas cooker or hob.

4. Carbon monoxide detectors in the space containing the combustion appliance should be sited between 1m and 3m from the appliance. A carbon monoxide detector should not be placed in a cupboard or other small enclosed space. If this is where the appliance is, the detector should be located at the appropriate distance outwith that space. Additional guidance on the siting of carbon monoxide detectors, including enhanced coverage, can be found in BS EN 50292.

5. The Tolerable Standard does not require carbon monoxide detectors to be interlinked, or to be interlinked with fire alarms.

6. Under the Equality Act 2010, deaf people can expect the same level of protection from CO as specified in this guidance through provision of specialist deaf alerts. For homeowners these may be provided by Health and Social Care Partnerships. Specialist deaf alerts must be consistent with the level of protection required for those who are not deaf.

Landlords have a duty to make reasonable adjustments to properties for disabled people.

Where telecare is in use, effective CO alarms should be installed which are compatible with any telecare alarms, and connected to the telecare system, ensuring a single system approach.



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