

Building Control Solutions  
Homeowner Guide 10

# Smoke Detectors in the Home



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## Introduction

In the UK, a substantial number of people die and others are injured in domestic fires every year, many from smoke inhalation. It is widely accepted that those deaths and injuries would be significantly reduced by installing and maintaining smoke alarms within dwellings.

## Purchasing a Smoke Alarm

- When purchasing a smoke alarm ensure it complies with the British Standard or the ISO Standard
- Self-contained, optical type, smoke alarms must comply with BS 5446: Part 1:2000 and heat alarms to BS 5446: Part 2: 2003—for automatic fire detection and BS 5839: Part 1: 2004—for the alarm system.

## REMEMBER!!

Never buy a second-hand smoke detector. Look for the BSI kite mark or the CE mark with the standards displayed.

## Where are Self-contained Smoke Alarms Systems Required?

- All new dwelling and extensions to existing dwellings
- In roof space conversions

## Installation

It is recommended that the installation of a smoke detector is done by a qualified person e.g. a registered electrician. British Standard BS 5839 : Pt 6 recommends that occupiers should receive the manufacturer's instructions concerning the operation and maintenance of the system.

## Location of Detectors

At least one smoke detector should be sited in each hallway or corridor and on each main landing of every staircase. In hallways or corridors exceeding 7.5m in length, no point within the hallway or corridor should exceed 7.5m from the nearest detector.

At least one smoke detector should be located between every bedroom and every other room in the dwelling other than a toilet, bathroom or shower room. No bedroom door should be more than 3m from the nearest smoke detector. At least one smoke detector should be located on the ground floor between each staircase and every room other than a toilet, bathroom or shower room.

Where the kitchen area is not separated from the stairway or circulation space by a door, there should be a compatible interlinked heat detector or alarm in the kitchen. This is in addition to the smoke alarms in the circulation space.

Where rooms are located on both sides of a staircase a smoke detector should be sited mid-way between the doors to these rooms.

In a single-storey dwelling protected by a single detector the detector should be as close as possible to living accommodation. In open plan accommodation where a stair is open to a living / dining area (or any other room where a fire may start) the living / dining area (or other room) should be treated as a circulation area and be protected by a smoke detector.

Where more than one detector is installed they will normally need to be interlinked so that they all operate their warning signal if any one detector operates.

Detectors should be preferably mounted on ceilings and should be located at least 300mm horizontally from any wall or light fitting. Ceiling mounted detectors should be located such that their sensitive elements are between 25mm and 150mm below the ceiling in the case of heat detectors, or between 25mm and 600mm below the ceiling in the case of smoke detectors.

If ceiling mounting is impracticable, in rooms and hallways not exceeding 10m in both length and breadth and not exceeding 50m<sup>2</sup> in area, detectors may alternatively be wall mounted provided that:

- a. the top of the detection element is between 150mm and 300mm below the ceiling; and
- b. the bottom of the detection element is above the level of any door opening; and
- c. the manufacturer's instructions state that the detector is suitable for wall mounting.

The sound pressure level of the detector's alarm signal should be at least 85 dB(A) when measured at the doorway of each bedroom with the door open, irrespective of where the fire is detected in the dwelling.

## Power Supplies

The power supply for a smoke alarm system should be derived from the dwelling mains electricity supply. The mains supply to the smoke alarm(s) should comprise of an independent circuit from the consumer unit or a regularly used lighting circuit.

There should be a means of isolating power without isolating the lighting.

The electrical installation should comply with Approved Document P (Electrical Safety).

## REMEMBER

Royal Berks Fire and Rescue Service can provide a Home Safety check to help you reduce the risk of fire and explain what to do if there is one. Call (0118) 945 2888 or log on to :- [www.rbfrs.co.uk](http://www.rbfrs.co.uk) and click on Your Safety.

## Maintenance

Building Control have no authority to ensure that smoke alarms are maintained. It is vitally important that your smoke alarm is tested weekly. Further information can be obtained from the manufacturers instructions and BS:5839: Part 6.

For maintenance purposes smoke alarms should not be fixed over a stair shaft or other opening between floors.

## Don't Do's

- Do not position next to or above a heater, or air conditioning outlet.
- Do not fix in bathrooms, garages or cooking areas (use a heat detector).
- Do not fix in places which get very hot (ie boiler room) where false alarms can occur.

## Providing Guidance

Please consult our Building Control Team prior to making an application. The Service is there to help if you are in any doubts over requirements or require further information.

This is one of a number of Homeowner Guides to help you through the Building Control process. Copies are available either through our website or by contacting our Building Control team.

## REMEMBER

Our website address is: [www.bcsolutions.org.uk](http://www.bcsolutions.org.uk)



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