

Smoke Detectors in Dwellings

Building Regulation Guidance Note

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.

Building Regulations require the installation of automatic smoke detectors to new dwellings, loft conversions and circulation spaces to extended dwelling.

Requirements

- All dwellings to be fitted with a fire detection and fire alarm system in accordance with BS5839-6: 2004-Grade D-category LD3 standards.
- The system to be mains operated in accordance with BS5446-1: 2000 or BS5446-2: 2003; and
- Must be battery backed up (either rechargeable or non-rechargeable).

Positioning of smoke and heat detectors/alarms

Detailed guidance is given in BS5839-6: 2004, but typical positions are as follows:

- Position in circulation areas on every floor of the dwelling – positioned between the sleeping spaces and places where a fire is likely to start e.g. living room/kitchen and yet close enough to the bedroom doors to effectively wake sleeping occupants.
- Smoke detectors should be positioned so that there is one within 7.5m of every habitable room door and a minimum of one detector in every storey of the dwelling.
- In a single storey 2/3 bedroom dwelling, a single smoke detector may be adequate if sited in the main circulation areas, **see figure 1**. In a typical two storey dwelling smoke detectors should be installed both at ground and landing levels. Therefore at least two smoke alarms will be required **see figure 2**.

Figure 1

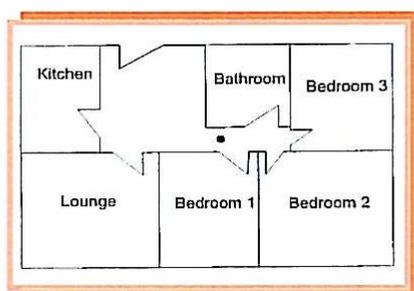
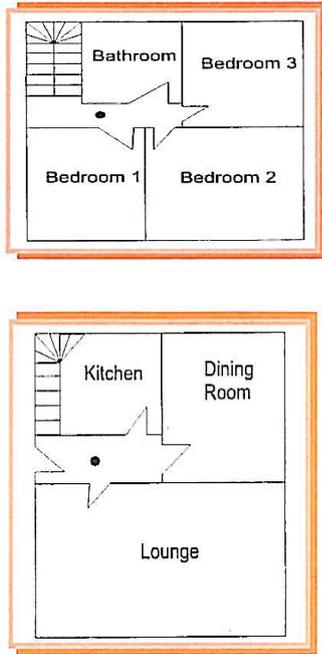
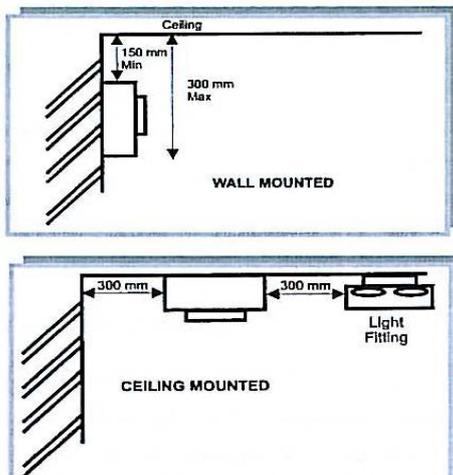


Figure 2



- If your kitchen is not separated from the stairways or circulation routes by a suitable door, then you must also install a compatible heat detector in the kitchen, interlinked with the other smoke detectors positioned as above in the circulation routes.
- All heat and smoke detectors are to be interlinked so all operate an alarm if one is triggered.
- Smoke detectors should not be fixed directly above heaters, air conditioning units, ducted heat outlets or in bathrooms, showers, cooking areas or garages, where steam, condensation or fumes could cause false alarms to occur.
- Smoke detectors should preferably be fitted to the ceiling in a central position and least 300mm from any wall or light fitting. Check the manufactures instructions carefully when deciding where to position them particularly if you are going to mount them on a wall. Wall mounted detectors should generally be fixed between 150mm and 300mm below the ceiling.



- Mains powered smoke alarms may be interconnected using radio links, provided that this does not reduce the lifetime or duration of any standby power supply below 72 hours. In this case, the smoke alarms may be connected to separate power circuits.
- Do not fit in very hot or very cold areas e.g. boiler rooms or unheated porches, where air currents may move smoke away from the detector before it activates.
- Always position your detectors so that they can be maintained, cleaned and tested – so don't position them over stairs etc.

Maintenance

Building Control has no authority to ensure that smoke alarms are maintained. It is vitally important that your smoke alarms are regularly checked as directed by the manufacturers instructions.

Extension to Dwellings

Where a dwelling has been extended and provides new habitable rooms above ground level or where they are provided to ground floor level and there is no final exit from the new room, a fire detection/fire alarm should be installed in the circulation spaces as for new dwelling.

Large House (i.e more than 1 storey and any storey exceeds 200m²)

- 1) Large dwelling of 2 storey (excluding basements) to have fire detection/alarm system of Grade B – Category LD3 (BS5839 -6:2004).
- 2) Large dwelling of 3 or more storeys (excluding basements) to have fire detection/alarm system of grade A Category LD2 (BS5839 – 6:2004).

For any informal advice on smoke detectors in dwellings, the Building Control Section would be pleased to assist you. Please ring Darlington (01325) 406214 and ask for a Building Control Surveyor.

Translation Information

If English is not your first language and you would like more information about this document, or if you require information in large print or Braille or on tape, please contact (01325) 406214.

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