

Building Standards

Fire detection and alarms in dwellings

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Requirements for fire detection and alarms in dwellings (v1)

1. INTRODUCTION

The fire detection and alarm requirements outlined in this guide are for building warrant submissions for dwellings encompassing extensions, alterations or conversions. The information is based on guidance presented in the Building Standards Division's Domestic Technical Handbook (which can be downloaded [here](#)) and the LABSS Information Paper INFOP34 - 2022 Version 1 Fire and smoke alarms - changes to the law (which can be downloaded [here](#)).

2. GRADE OF DETECTORS

2.1 Existing and proposed dwelling

For domestic building warrant applications, the grade of all existing smoke and heat detectors installed in the existing dwelling should be detailed using the categories detailed in Table 1 below, and state for each existing detector if it is interlinked to the existing fire and smoke detection system installed in the dwelling.

Likewise, for the proposed dwelling, the grade of all proposed smoke and heat detectors to be installed in the dwelling should be detailed in building warrant applications using the categories detailed in Table 1 below, and a note should state that all proposed detectors are to be interlinked to the existing fire and smoke detection system installed in the dwelling.

Table 1 Grade of detector (as detailed in BS5839-6)

Grade	Details
D1	Mains-powered detector, with a tamper-proof standby supply consisting of a battery or batteries.
D2	Mains-powered detector, with an integral standby supply consisting of a user-replaceable standby supply battery.
F1	Battery-powered detector, powered by a tamper-proof primary battery or batteries.
F2	Battery-powered detector, powered by a user-replaceable primary battery or batteries.

3. SMOKE AND HEAT DETECTION PROVISION

3.1 Building Regulations

Under the Building Regulations, when is a new smoke or heat detector required in a domestic property?

A new smoke or heat detector is required in a domestic property **when the risk associated with warrantable works increases to a certain level**. According to the LABSS Information Paper INFOP34, examples of this risk level for warrantable works in domestic properties are:

- a) **the creation of an inner room, or**
- b) **an extension to form a new kitchen (note this could also encompass the relocation of an existing kitchen to another room in the dwelling), or**
- c) **a conversion to form a new storey.**

Note that risk will always be considered by Midlothian Building Standards on a case-by-case basis. As such, the above list of examples should not be considered to be exhaustive, but the list does provide a useful starting point when considering other situations.

The default position is that **any new smoke or heat detectors associated with work at this risk level will require to be mains-powered and interlinked**. Any deviations from these requirements for the proposed dwelling, for example, proposing to substitute a mains-powered detector with a battery-powered detector, would be 'alternative to guidance' and would need to be justified to the verifier.

It should be noted that any **existing mains-powered detectors should not be replaced with battery-powered detectors**.

Where the existing system is not mains-powered, to ensure compliance for proposals with this level of risk, the existing detectors typically will require to be upgraded to mains-powered and interlinked. For example, if the existing system is not mains-powered and it is proposed to undertake an attic conversion to form a new storey, then typically all the existing detectors will require to be upgraded to mains-powered and interlinked, to ensure the conversion fully complies for the level of risk outlined above.

On the building warrant application for the proposed dwelling situation, the proposed smoke or heat detectors to be installed to meet this level of risk should be clearly identified, and be separately identified compared to the proposed smoke or heat detectors that are to be installed to meet the Tolerable Standards (see 3.2 below).

Certification will be required for any mains-powered smoke or heat detector that is associated with this level of risk.

3.2 Tolerable Standards

Any new smoke or heat detector that does not fall into the risk level detailed in 3.1 will typically fall under the Tolerable Standards (for which Building Standards has no direct remit) and therefore may be battery-powered and interlinked to the smoke and heat detection system serving the property. The option to choose a higher level of protection is also available to homeowners.

Certification will not be required for any battery-powered smoke or heat detector that falls solely under the Tolerable Standards.

3.3 Hybrid system

Where work involves both warrantable work at the risk level detailed in 3.1 above, and additional smoke or heat detectors are installed under the Tolerable Standards detailed in 3.2 above, the resulting system will typically be a D1/F1 hybrid system, encompassing some combination of mains-powered and battery-powered devices.

Certification will be required for any hybrid system that is associated with the level of risk detailed in 3.1 above.

4. INTERLINKING

All detectors in the proposed fire and smoke detection system, whether existing or new mains-powered or battery-powered as detailed in section 3. above, should be fully interlinked throughout the dwelling.

5. CARBON MONOXIDE

If a dwelling has a carbon-fueled appliance, for example, a boiler, fire, heater, or flue, in any room, there is also a requirement for a carbon monoxide detector in that room. Carbon monoxide detection is separate from the fire alarm system and should not be interconnected to those devices.