

The popularity of downlights in dwellings has had a much bigger effect than just transforming how modern lighting looks.

Twenty years ago a typical room would have a plaster board ceiling with plaster skim and one or two ceiling roses to provide light. The plaster and board provided effective heat and fire integrity, often exceeding thirty minutes of fire containment, even though temperatures would exceed 1000°C.

Today, that same room may have twenty or more downlights each providing a 70 to 120mm diameter hole through which flame and high temperatures gain immediate access to the underside of the wooden or chipboard floor of the room above. This has drastically reduced the ability of ceiling surfaces to contain fire and allows fire to travel vertically more quickly. As most houses have bedrooms on the upper floor, the increased danger to occupants is obvious.

Fire rated downlights have been introduced to maintain the fire integrity of ceiling surfaces but these products have also changed the liability that the installer is now exposed to. With these products the installer is taking on 'life-time' liability for the fire integrity of the structure under the Building Regulations.

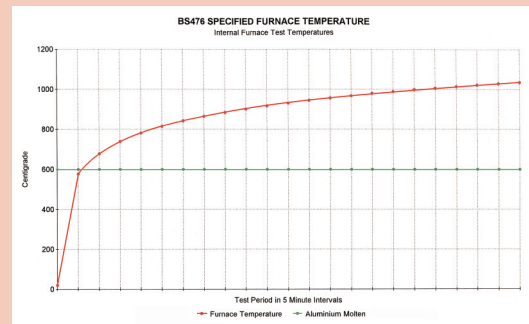


Figure 1



Figure 2

THE INSTALLER IS COMPLETELY RESPONSIBLE FOR THE INSTALLATION THROUGHOUT ITS LIFETIME.

Products that have been tested within the specifications of BS476 by a UKAS Accredited Test House will bear the accreditation mark in figure 2. Products may claim to have been tested to this standard but only the accreditation mark on the product, or its packaging, provides assurance of compliance.

As installers may be held to account for their work where a fire event occurs for many years to come, using accredited products proves that the installer has used reasonable care to ensure their installation complies with the regulations.

APERTURES AND FIRE STOPPING – THE BUILDING REGULATIONS

Section 11 of Approved Document B Building Regulation 2000 requires the installer to fit a fire stopping barrier to the aperture between the downlight and the ceiling surface in intumescent material, ceramic resin or fibreglass fire blanket.

To save installers time, all of Emcogroup's fire rated downlights are supplied with a fire barrier either pre-fitted between the rim and the underside of the ceiling surface (figure 3) or as an item to be fitted on the canister side to seal against the inside edge of the aperture cut out (figure 4).

Intumescent material expands when exposed to heat to fill gaps and irregularities without pressure so that there is no risk of any components dislodging during a fire event.

Failure by an installer to fit fire stopping is a blatant breach of regulations and compromises the fire integrity of the ceiling structure. This could lead to civil and criminal proceedings where there is a premature fire integrity failure.

BS476 YOUR PEACE OF MIND

Figure 1 shows in red the room temperatures specified during a BS476 test, a test which simulates a fire event in a typical room. The green line shows the temperature at which aluminium is molten (600°C). All of Emcogroup's products featuring an aluminium trim or front rely on the steel canister for fire resistance and integrity as the aluminium fronts fall away within 25 minutes of the test commencing.

Figure 5 shows the steel lip arrangement which locates to the underside of the ceiling surface to provide resistance against the fixing springs once the aluminium front has detached in a fire event.

Emcogroup's downlights use steel (1500°C melting point) with either welded steel parts or steel thread and bolt in the construction of the fire resisting canister. Our research found that aluminium components and rivets failed rapidly in fire testing which can lead to the downlight dis-assembling within the ceiling void before achieving the required duration.

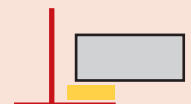


Figure 3
Standard range

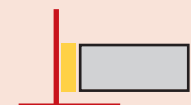


Figure 4
Atlantic & Pacific range

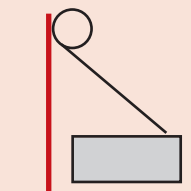


Figure 5

LEGISLATION



FULLY TESTED AND APPROVED FOR 30, 60 AND 90 MINUTE FIRE CEILINGS

Fireblok fire rated downlight range have been fully fire tested and approved to full 100 minute duration in accordance with BS 476 part 21/23 1987 by Warrington global safety. They comply fully with the building regulations approved document B for ceiling constructions for 30 minute, 60 minute and 90 minute.

FULLY TESTED AND APPROVED FOR ACOUSTIC STANDARDS

Fireblok downlights are fully acoustically tested and approved to BS EN ISO 140-3, BS EN ISO 140-6:1998. This is in full compliance with building regulations approved document E. This requires that all new buildings provide the required level of noise attenuation between adjoining partitions and ceilings.

COMPLIES WITH APPROVED DOCUMENT PART C

Where shown downlights are suitable for use to meet the requirements of building regulation approved document C - moisture and airflow. The regulation requires that a sufficient air-tight seal is provided to avoid condensation forming in cold, unvented roof spaces.

PART P COMPLIANT

All Fireblok fittings are supplied with comprehensive installation instructions in compliance with Part P of building regulation.

PART L1A & L1B

The Pacific range fitting meets the requirements of Part L of building regulations relating to the installation of low energy luminaries.

Complies with Scottish building regulations, section 2 (fire), section 3 (air movement) and section 5 (noise).