

# Downlighters under fire

**With the increasing number of regulations and stricter application of current guidance, the recessed down lighter, more than any other component, is now being closely scrutinised to see that it is suitable for its intended application, says Alan Rogers of Safe and Sound Lighting**

**T**his intensified scrutiny is welcomed by the industry as it is signalling the end of the cheap and sometimes unsafe imports, enabling the electrical contractor to compete on a more even basis and, more importantly, ensuring safer installations for the homeowner.

Installations in the upper storey, where the rear of the down lighter projects up into the open roof space will be subject, eventually, to a number of regulations.

Normally, there would be no fire or acoustic considerations to take into account but with overheating problems from insulation, and fire risks from contact with stored items, protection must be fitted. Part P requires safe installations in all cases. Also, by following the tenor of Part P, the installer will ensure that he is not negligent in not providing this protection and would not therefore be liable for any future consequential damages resulting from a fire.

The upper storey ceiling will have a significant role to play in the air tightness requirements of Part L and any down lighter fitted into this will need to meet a minimum level of air leakage.

Similarly, any down lighter fitted into an upper storey bathroom ceiling will need to be sealed, in addition to its IP rating, to prevent the passage of condensation up into the open roof void. This is being covered by the current review of BS5250.

Bathroom lighting regulations are complicated, dividing the room into zones and providing a guide as to what level of water resistance protection the light should achieve per zone.

Zone 0 - Inside the bath or shower tray itself. Any luminaire fitted in this area must be low voltage and be rated to at least IP67, which is totally immersion proof.

Zone 1 - The area above the bath or shower tray to a height of 225cm from the floor. A minimum rating of IP44 (splash proof) is required for lights fitted here.

Zone 2 - The area stretching 60cm outside the perimeter of the bath and to a height of 225cm from the floor. Again a minimum rating of IP44 is required.

Zone 3 - Anywhere not covered by the other zones and where no water jet is likely to be used. No IP rating is required.

In area of high humidity such as saunas, it is advisable to use luminaires that are at least IP65 (jet proof) rated.

Generally, outside Zone 0, installers use IP44 or above throughout the room, and for safety

use low voltage types.

However, the way in which the IP rating is achieved is under review by IEC and yet more changes are expected here.

Die cast down lighters must not be used in fire rated applications because their low melting point materials cause them to fall out of the ceiling within minutes of the fire starting.

Also, because some materials used relax at low temperatures it is not possible to maintain a tight seal to the ceiling when the lights are in operation.

Part P has highlighted the problems, for the Competent Person, associated with the use of low cost down lighters and there are now many instances where the electrician is not prepared to fit down lighters already purchased by their customers from DIY stores.

Insulation is now used extensively to meet the needs of both Parts E and L, and the requirements of Continuity of Insulation mean that down lighters that require insulation to be removed, to prevent overheating, should not be used.

It is also important, where low voltage down lighters are needed to operate below the blanket of insulation, that the light and transformer are from the same supplier. This is to ensure that the combined self heating effect of both components on the ambient temperature, within the ceiling void, has been tested for satisfactory operation.

All installations in timber separating floors, or in timber intermediate floors in houses, must be fire protected. Penetration of the ceiling lining will cause a serious downgrade in its fire resistance unless down lighters are fitted that will reinstate that resistance. There is even a case for concrete floor structures where a fire rated down lighter will prevent or delay the deadly progression of smoke and gas through and along the ceiling void.

In a similar way, down lighters will affect the acoustic performance of floors and any down lighters fitted must be capable of restoring the airborne and impact acoustic properties of the ceiling lining.



For Robust Details Timber Separating Floors, only down lighters that have been satisfactorily assessed to Appendix F (Robust Details Handbook January 2005) may be fitted directly into the main ceiling lining.

A number of the above protection and operational requirements, depending upon the application, can be met by using a quality pressed steel low voltage down lighter together with an approved fire and acoustic cover or combination of a cover and plasterboard box built over the back of the fitting

The simplest, most economical and safest (the protection having been properly installed) solution is to select one of the down lighters on the market that have protection built into them, have been tested in representative ceiling/floor structures to BS476 Parts 21 or 22, have been satisfactorily acoustically assessed to Appendix F (Robust Details Handbook January 05), have a high IP rating, a low air leakage rating, can operate under insulation and are capable of being in contact with materials in the void without creating a fire hazard or over heating problems.

Electro-technik's low voltage SNAPLITE range has inbuilt protection to these levels, meets all the above criteria and is very easy to install from below the ceiling.

The need to protect down lighter installations is still, despite the growing awareness campaigns, sometimes queried but the increasing regulatory pressures are now silencing this debate and clearly defining the product's contribution to a safe, quiet and energy efficient home environment.

- For further details, please telephone 01527 595 349