



Frequently Asked Questions

Fire & Sound
Protection Covers

Fire Protection
Sleeves for
Electrical Services

Vapour & Thermal
Seal for Loft Voids



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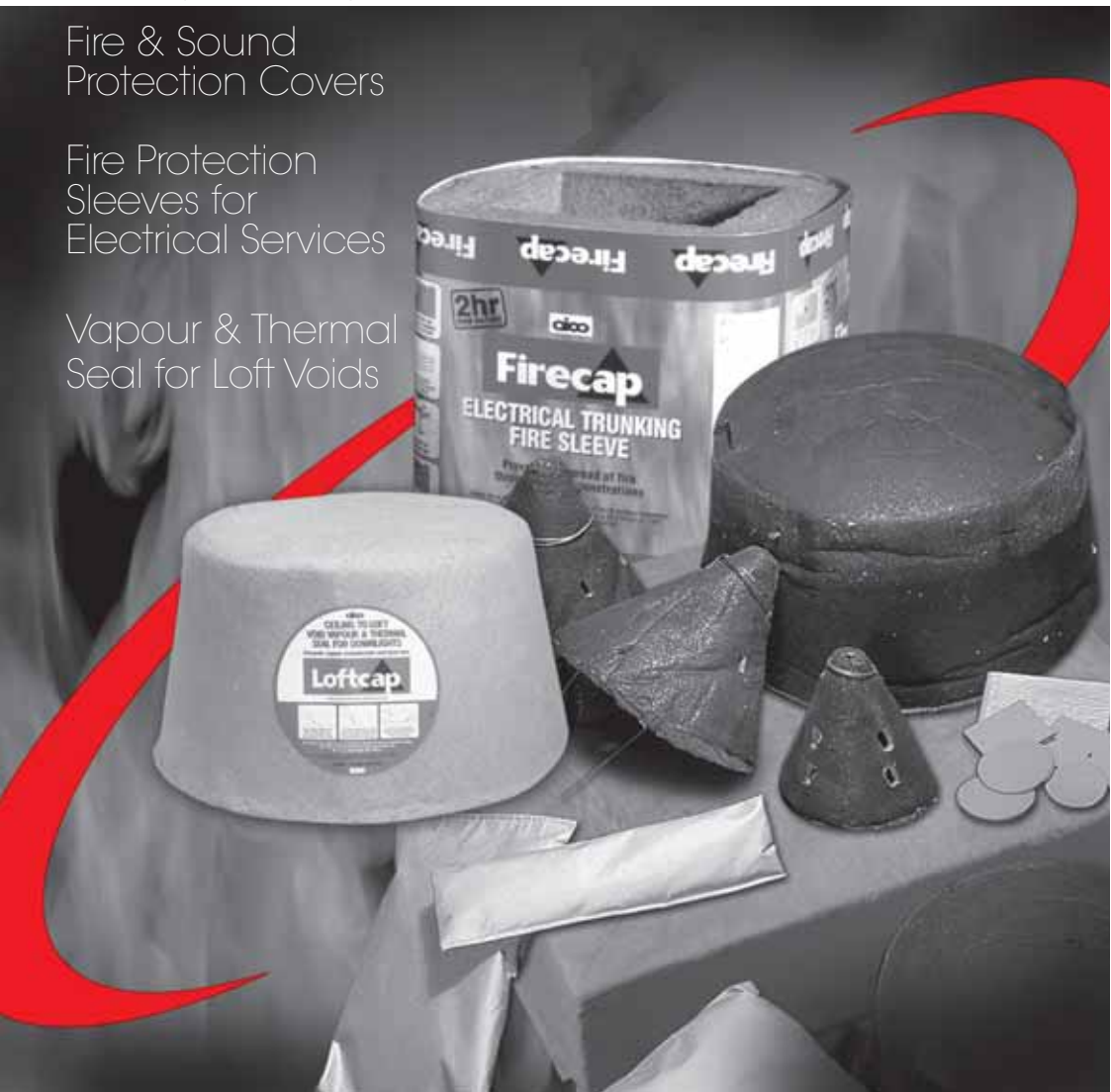


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Frequently Asked Questions

FIRE PROTECTION COVERS

1. Why should I fit fire protection covers to recessed luminaires?

Building Regulations requires the sealing of penetrations in fire resistant elements in walls, floors and ceilings.

The IEE Regulations requires the sealing of penetrations in fire resistant elements in walls, floors and ceilings.

2. Where does it say this?

The Building Regulations 1991, Approved Document B 2000 edition. Applicable in England and Wales.

Building (Scotland) Regulations 2004, Technical Handbook No. 2 Applicable in Scotland.

The Building Regulations (Northern Ireland) 2005, Technical Booklet E. Applicable in Northern Ireland.

IEE Regulations, BS 7671:2001. Applicable in the whole of the UK.

3. What does it say in these documents?

England and Wales - Approved Document B, page 79, section 11.2. "If a fire separating element is to be effective, then every joint, or imperfection of fit, or opening to allow services to pass through the element, should be adequately protected by sealing or fire-stopping so that the fire resistance of the element is not impaired".

Scotland Technical Handbook No.2 extract from section 2.29 A service opening (cable or pipe) which penetrates a separating wall or floor should be fire stopped providing at least the appropriate fire resistance duration.

Northern Ireland - Technical Booklet E, page 70, section 3.44 "fire stopping shall be provided at... (b) all openings for pipes, ducts, cables, conduits or trays which pass through any fire separating element."

IEE Regulations, page 101, section 527-02-01. "where a wiring system passes through elements of building construction such as floors, walls, roofs, ceilings, partitions or cavity barriers, the openings remaining after passage of the wiring system shall be sealed according to the degree of fire resistance required of the element concerned (if any)".

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4. None of these specifically mentions recessed light fittings, so do they apply?

As with most regulations, it is almost impossible to cover all possible circumstances and there is always the question of interpretation of the wording used. However, if there is a need to fire-stop cables, conduits, pipes and ducts - these are specifically mentioned - the requirements must apply to the openings made for recessed light fittings, taking into account that in many cases, the openings would be larger.

5. Does this apply to domestic dwellings and non residential properties?

The requirements for fire resistance are usually more onerous for non-residential properties and many of the Building Regulations documents are being split into domestic and non-domestic sections to make it clearer to the installer on what is required in the different types of property.

6. How will I know if the ceiling or wall is a fire resisting one?

In the best interests of the occupier, and perhaps your own, it is safer to assume that all ceilings are 'fire separating elements' and fit a fire protection cover as a matter of course.

Compartmentation is a critical part of the fire protection requirements for many buildings. Flats and similar multi-storey buildings depend on the fire survival properties of walls, floors and ceilings both to allow sufficient time for safe evacuation of the premises and to restrict the spread of fire to adjoining buildings or areas. In view of these requirements it is clear that fire protection covers have a vital role to play in preventing the spread of fire. If the installation is subject to Building Control, it is recommended that you ask your Building Control Officer for further advice.

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7. What should I fit to maintain fire integrity?

There are a number of options available; fire covers with little heat insulation properties, downlights with various types of fire protection properties and fully intumescent downlight covers, such as Firecap.

An internationally recognised fire expert has expressed concern that many of these options are not suitable in all applications. Also, fire rated downlights can be easily removed by the home owner and unwittingly replaced with a downlight that has no fire protection properties. In view of these potential problems, serious consideration should be given to installing a fire cover that fits over the downlight, above the ceiling, which is unlikely to be disturbed if the light fitting is serviced or replaced. Firecap is the ideal solution.

8. Can Firecap be used with all lamp types?

Yes, this is a very important point. Many light fittings with claimed fire resistant properties recommend that only aluminium reflector lamps should be used - to avoid overheating which can cause premature activation of the intumescent material. This perhaps is no problem when the fitting is first installed, but when the occupier has to change the lamp they may inadvertently fit the wrong type. With Firecap there is no problem, as all lamp types can be used in the light fitting - Aluminium reflector and 'cool beam' dichroics. This means that there is no risk of fitting the wrong type of lamp at a later date that may actually cause a fire!

9. With which Standard should fire protection covers comply?

BS 476:Pt.21:1987, and BS 476:Pt.23:1987 as well as BS EN 1365-2:2000 are applicable to fire protection covers. It is vital that you ensure that your selected product has been 3rd party tested to meet the requirements of the standard relevant for the application.

10. What is the difference between a 'loaded' ceiling and an 'unloaded' ceiling BS 476: Pt.23 fire test?

The test criteria in an 'unloaded' fire test is based on the ability of the ceiling (and any fire protection products fitted into it) to prevent heat from reaching the supporting beams above it. The failure point is when 400°C is recorded on sensors fixed to the beams. This test is the most demanding on the performance of fire protection covers in a fire. To ensure that optimum protection is achieved, all Firecap covers have been tested to the 'unloaded' requirements of BS 476: Pt.23:1987.

The 'loaded' test is less arduous and is based upon the amount by which the ceiling beams distort during the test whilst having a pre-determined load applied. Products with little insulation value tend to be tested to the 'loaded' standard.

11. With which Standard/s do Firecap downlight covers comply?

To ensure total compliance with the standards, every model in the Firecap downlight cover range has been individually tested to the relevant standard by an independent testing laboratory and fully meets the requirements as listed on the following page:

AFF109/150, 109/200, 109/250, 109/300, 109/350

The full range of Firecap fire protection downlight covers have been assessed for the following applications:

Suspended Ceiling and Timber, Steel or Concrete Beam/Joist protected by plasterboard.

Assessment No: CHILT/A02105/Chiltern International. Fire.

Duration of effective protection: 60 minutes.

AFF109/150, 109/200, 109/250

Suspended ceiling (unloaded test) - tested to BS 476: Pt.23:1987 requirements by Chiltern International Fire. Achieved 72 minutes duration of effective protection without failure.

Certificate number FEI/F99029.

Plasterboard ceiling - tested to BS EN 1365-2:2000 requirements by BRE. Achieved 60 minutes protection against fire and heat without failure. Certificate number TE94667.

AFF109/300, AFF109/350

Suspended ceiling (unloaded test) - tested to BS 476: Pt.23:1987 requirements by BRE. Achieved 73 minutes protection against fire and heat without failure.

Certificate number FG8962/208217.

To demonstrate the superior qualities of Firecap fire protection covers, tests were conducted by Chiltern International Fire using the general principles of BS 476: Pt.20:1987. These resulted in Firecap downlight covers achieving 2 hours fire and heat protection without failure. There is no requirement for this level of protection at present, but the tests demonstrate to the most conservative of specifiers that Firecap will exceed the fire protection requirements of even the most demanding of applications.

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12. With which Standard do Firecap fluorescent module covers comply?

To ensure total compliance with the standards, the Firecap fluorescent module cover range has been tested to the relevant standard by an independent testing laboratory and fully meets the requirements as listed below:

AF130/600, AF130/1200

Suspended ceiling (unloaded test) - tested to BS 476: Pt.23 :1987 requirements by BRE. Achieved 73 minutes protection against fire and heat without failure.

Certificate number FG8962/208217.

13. Are the Firecap fire protection covers easy to fit?

The AFF109/150, AFF109/200 and AFF109/250 downlight covers are conical shaped and are easily rolled up to enable fitting through the cut out for most light fittings. The covers are held in position by means of an easy to fit wire frame. It is only necessary to place the cover in position, feed the cable through to the light fitting and wire up. Then pull the legs of the wire frame into place, trim them to size and snap the light fitting into the ceiling cut-out. No screws are required to secure the cover in place.

The AFF109/300 and AFF109/350 covers are a slightly different shape and require a minimum cut out size of 150mm for installation below ceiling level. They are simply placed over the light fitting and require no other fixing.

The AF130/600 and AF130/1200 fluorescent module covers are made from a flexible fire proof material that is very easy to transport and install. The covers are a one piece unit that can be easily folded for insertion through the ceiling tile. They simply spring back into shape when positioned and do not require fixing clips, frame assembly or sealants. They are particularly suited for use where low ceiling voids restrict access to the luminaire.

14. What are the Firecap fire protection covers made from?

All of the Firecap downlighter covers are made from a fully intumescent fibre material. When a fire occurs, the material will expand to 3 times its original volume to block the passage of heat and flames into the void above.

The AF130/600 and AF130/1200 covers are made up of a mineral fibre matrix combining organic binders to produce a very flexible cover.

In both cases the covers effectively take the place of the original ceiling material, so maintaining, if not exceeding, its fire integrity.

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15. Are the Firecap fire protection covers made from any materials hazardous to health & do they need special handling?

The materials used in the manufacture of these products are not hazardous to health if used in accordance with the instructions supplied with the product. A very small number of people may develop a mild skin irritation with prolonged use. In these instances, the use of a barrier cream or gloves may be advisable.

16. Can the Firecap fire protection covers be used with fluorescent light fittings with an integral gearbox?

Yes, it would be necessary to measure the width of the fitting at its widest point - including the integral gearbox - to determine the cover to use. Use this figure and add a 30mm clearance around the fitting to enable you to select the appropriate size cover. The same height restrictions would apply as with an ordinary fitting. For example, a cover is required for a fitting 190mm wide (including gearbox) and 170mm high. Add 60mm to the width to obtain the clearance (the covers are round, so a 30mm gap all around would be achieved by adding 60mm to the width). This would give a width of 250mm.

Refer to the downlight cover selection guide and select the cover suitable for this diameter and the height of the fitting (170mm). You will note that the cover required would be an AFF109/300.

17. Can a transformer be sited inside a Firecap fire protection downlight cover?

No, the heat produced from the light fitting could cause damage to the transformer due to overheating. Site the transformer as far away from the fitting as possible - check the instructions supplied with the transformer for any restrictions that may apply.

18. Can a remote gearbox be sited inside a Firecap fire protection downlight cover?

A remote gearbox for a fluorescent fitting should not cause a problem if it were placed inside the cover, but allowance must be made for the additional width - see Q16 for further information. DO NOT place remote gearboxes for HID fittings inside the downlight cover, as overheating of the gearbox and fitting may cause irreparable damage to both parts.

19. Can insulation material be placed around the Firecap fire protection covers?

There should be a minimum gap of 20mm ($\frac{3}{4}$ "") around the cover to avoid overheating the light fitting. Overheating may cause a rapid reduction in lamp life. Do not place insulation materials directly over the cover as this can result in overheating problems. Similarly, do not cover transformers or remote gearboxes with insulation material as this can cause premature failure of the products due to overheating.

20. Can a Firecap fire protection cover help to prevent a luminaire from becoming the source of a fire?

Yes, low voltage and mains halogen lamps and some discharge lamps get very hot during use. Rodents thrive in ceiling spaces and their nesting material can be highly flammable. If this material comes into contact with a hot lamp it can easily ignite. The use of fire covers helps to prevent flammable materials from coming into contact with the lamp.

21. Can Firecap fire protection covers reduce noise transmission through a luminaire in the ceiling?

Yes, Building Regulations in the whole of the UK require that adequate steps are taken to restrict the transmission of sound from one part of a residential building to another - Approved Document E, England & Wales; Technical Standard No.5, Scotland; Technical Booklet G, Northern Ireland. Sample Firecap fire protection covers have been tested by the Building Research Establishment (test report 213942, 2nd September 2003) where they were proven to effectively reinstate the original sound insulation properties, when correctly fitted, to both an internal ceiling (40dB requirement) and a separating ceiling (60dB requirement).

Firecap is LANTAC and NHBC type approved for Building Regulations and the tests above have been accepted as confirming compliance with the requirements of Robust Details Ltd.

22. Can Firecap fire protection covers reduce heat loss through a luminaire in the ceiling?

Yes, the Firecap downlight and module covers are designed to completely cover the luminaire and as they are manufactured from a substantial thickness of fibre material, they will reduce the amount of heat escaping from the room through the light fitting.

FIRE PROTECTION FOR OTHER ELECTRICAL SERVICES

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| <p>1. Which other electrical services require fire protection?</p> | <p>Depending on the application, switches, sockets and ceiling roses may require gaskets. In many applications, Conduits, Trunking, Cable Trays and Ventilation Ducts will almost certainly need fire protection sleeves, or the provision of alternative fire protection methods.</p> |
| <p>2. What are fire protection sleeves?</p> | <p>The Firecap range of Conduit, Trunking, Cable Tray and Ventilation Duct fire protection sleeves have been designed to prevent the spread of fire through service penetrations made by both electrical and plumbing installers. They are extremely efficient and simple to install.</p> |
| <p>3. What are the Firecap fire protection sleeves made from?</p> | <p>The Firecap fire protection sleeves for electrical services are made from a blend of mineral fibres and exfoliated graphite to produce a material that combines high grade fire stopping characteristics with excellent acoustic and thermal insulation properties.</p> |
| <p>4. Where should they be fitted?</p> | <p>Where any hole (penetration) is made through a fire barrier such as walls, ceilings, floors to run cables, pipes, ventilation ducts etc.</p> |
| <p>5. Why should I fit fire protection sleeves to electrical services penetrations?</p> | <p>Building Regulations apply to service penetrations through walls and floors just as they do to the installation of recessed light fittings. Approved Document B in England & Wales
 Technical Handbook No:2 in Scotland
 Technical Booklet E in Northern Ireland
 All of these documents require that the fire protection properties of the element in question (wall, ceiling, floor) are re-instated to the original fire rating. The responsibility for 'making good' was previously considered to lie with the main contractor, but the introduction of Approved Document P in England & Wales has made it clear that where electrical penetrations are concerned, it is the responsibility of the electrical contractor to ensure that fire integrity is reinstated. Failure to do so could leave them open to prosecution.</p> |
| <p>6. What type of property do the regulations apply to?</p> | <p>All types; shops, offices, hotels and other places providing sleeping accommodation, educational establishments, factories, warehouses, hospitals, in fact almost every building is covered.</p> |
| <p>7. So, these regulations also apply to domestic installations?</p> | <p>Yes they do, but in a domestic property it is likely that the cables run inside or above the fire separating element. In addition, it is not usual to have the volume of cabling that would be found in a commercial installation.</p> |

7. Continued...

However, care needs to be taken to ensure that you meet the requirements even in the smallest domestic property. Blocks of flats where the services (pipes, cables, ventilation ducts) pass through most of the floor levels will certainly require careful attention. Consequently, it is vital that adequate steps are taken to maintain fire integrity throughout the building.

8. How can I reinstate the fire integrity of a wall, ceiling or floor?

There are a number of methods acceptable under Building Regulations; mortar, intumescent mastic etc, but probably the easiest is to fit an intumescent sleeve around the particular service element to completely and effectively seal it against fire.

9. Are fire protection sleeves required to meet any fire standards?

They certainly should do and the supplier should be able to provide you with proof that they have been 3rd Party tested by an independent body to the relevant standard.

10. Which fire standard applies to fire protection sleeves

BS 476: Pt.20 and BS 476: Pt.22 are the fire standards relevant to fire protection sleeves. The Firecap range of fire protection sleeves have been 3rd Party tested by Chiltern International Fire to these standards and in addition, to the general principles of the more onerous EN 1366-3 standard. Duration of effective integrity - 132 minutes.

11. With which standard should gaskets & pillows comply?

Gaskets for all types of switch boxes, BESA boxes and fire pillows should be 3rd party fire tested to comply with the requirements of BS 476: Pt.22. Ceiling Rose gaskets should be 3rd Party tested to BS 476: Pt.21.

12. Are the Firecap fire protection sleeves easy to fit?

Screws, fixings or special skills are not required to install any of the Firecap sleeves. There is no need to seal with mastic if they are snugly fitted because in a fire the sleeves expand outwards as well as inwards. The sleeves can be fitted from either side of a wall or floor penetration by sliding it over the trunking etc. If access is limited, the sleeve can be easily cut with a padsaw and wrapped around the service - tape is supplied with the product to reseal it.

13. Do the fire protection sleeves have any acoustic and thermal properties?

The compressible nature of the material creates a highly efficient acoustic barrier between the conduit/ducting and the wall/floor as well as absorbing sound transmission from other areas. Firecap sleeves have the same thermal conductivity as mineral wool fibre creating a thermal break between the service and the wall, preventing condensation penetration.

VAPOUR AND THERMAL SEAL FOR LOFT VOIDS

1. Why is there a need for a vapour and thermal seal for loft voids?

Building Regulations in the UK call for uninterrupted coverage of insulation in a loft space. This is difficult to achieve when recessed downlights are installed in the ceiling due to the need to avoid overheating of the light fittings that would occur if the insulation material were laid directly over them.

In addition, Building Regulations and the NHBC call for a vapour seal between the living space and the loft to avoid condensation forming on roof timbers that may cause rotting.

2. What can I use to meet these requirements?

There are a number of methods currently in use, ranging from specially made 'plaster and wood' boxes to flower pots! None of these options are likely to meet the full requirements and in the case of purpose made boxes can prove very expensive and time consuming. Loftcap has been approved by the NHBC and the Lighting Association for use in these applications, and they are reasonably priced.

3. What is Loftcap made from?

Loftcap is made from inert mineral fibres and organic binders designed to resist the formation of water droplets that may be a problem with other options. They are both non-combustible and non-electrically conductive as well as being lightweight, but rigid enough to support loft insulation. They are very durable being rot, corrosion and vermin resistant.

4. Are Loftcaps easy to install?

Yes, they are simply placed centrally over the light fitting using a standard silicone mastic to seal them to the ceiling surface. No screws or fixing clips are required.

5. Don't they cause the light fittings to overheat?

No, Loftcap has been specially designed for the purpose and have been extensively tested to ensure that overheating does not occur.

6. Does Loftcap have fire resistance and acoustic properties?

Yes they do, but they have not been quantified, as they are not normally required in a loft void. Loftcaps are larger than Firecap fire covers - due to the different applications they are designed for. Consequently, a Loftcap is not likely to fit in the confined space between floor levels.