



## ALERT

### Installation of thermal insulation around electrical equipment and accessories

**This cautionary notice provides information to employers, workers and contractors regarding electrical safety issues when installing thermal insulation.**

SANS 10400-XA Energy usage in buildings will be promulgated soon and one of the energy efficiency interventions which will become mandatory is the installation of thermal insulation in buildings.

Thermal insulation installers are required to take additional electrical safety measures to protect themselves and home/building owners.

When installing ceiling insulation, one must prevent or minimise the associated health and safety risks.

For example:

- ▶ Serious electric shocks or burns caused by contact with:
  - defective electrical cables - e.g. perished or rodent-damaged
  - exposed terminals or conductors of electrical equipment in the ceiling space - e.g. behind light fittings, fans, etc.
  - electrical cables damaged while installing insulation materials - e.g. by cutting, piercing, nailing or stapling into electrical cables, and
  - aluminium foil insulation which has become energised through contact between the foil and a source of electricity
- ▶ Fire resulting from insulation material installed near recessed lights (in particular halogen down lights) and accessories without suitable clearances/barriers in place

Default clearances are 50mm from incandescent and 200mm from halogen down lights including 50mm clearance for any associated transformer - unless the down light is designed for the application or is installed within a suitable fire resistant enclosure.

- ▶ The safe operating temperature of electrical cables may be affected when surrounded by thermal insulation material- advice regarding such de-rating of electrical cables may be obtained from a person with specialist expertise such as a licensed electrical contractor
- ▶ Insulation containing synthetic mineralfibres - Rockwool, glass wool and other fibres or dust can irritate the skin,eyes and upper respiratory tract
- ▶ Hazardous substances - e.g. asbestos,pesticides, chemicals or lead
- ▶ Heat and humidity - these and other factors can cause heat stress
- ▶ Vermin or insects in the ceiling cavity or in untreated or damp insulation
- ▶ Non fire-retardant insulation
- ▶ Accessing and traversing the roof cavity, tripping over debris, material and tools
- ▶ Working at heights
- ▶ Inadequate lighting

#### **Prior to installation**

If you're an employer or self-employed person prevent or minimise health and safety risks associated with installing ceiling insulation by doing a proper risk management. The risk management measures must include measures to avoid damaging electrical equipment/cables when installing conductive material like aluminium foil insulation products, and also to avoid overheating electrical fittings by smothering them with bulk thermal insulation.

## Recessed luminaires & incorrect installation of bulk thermal insulation around electrical equipment and accessories

Recessed luminaires and their auxiliary equipment shall be installed in a manner designed to minimize temperature rise and prevent the risk of fire. The temperature rise at the rear of a recessed luminaire shall be limited to prevent damage to adjacent materials.

This requirement shall be satisfied by one of the following methods:

- The use of a luminaire specifically designed and certified by the manufacturer to permit -
  - contact with combustible materials; or
  - enclosure or covering by thermal insulation material, as appropriate to the location of the luminaire.
- Installation of the luminaire within a suitable fire-resistant enclosure.
- Provision of required clearances from combustible and thermal insulating material as specified by the manufacturer of the luminaire.
- Provision of the default clearances from combustible and thermal insulating material as specified in the sketch.

Where manufacturer's installation instructions that specify required clearances are not available, the luminaire shall be installed in accordance with (b) or (d).

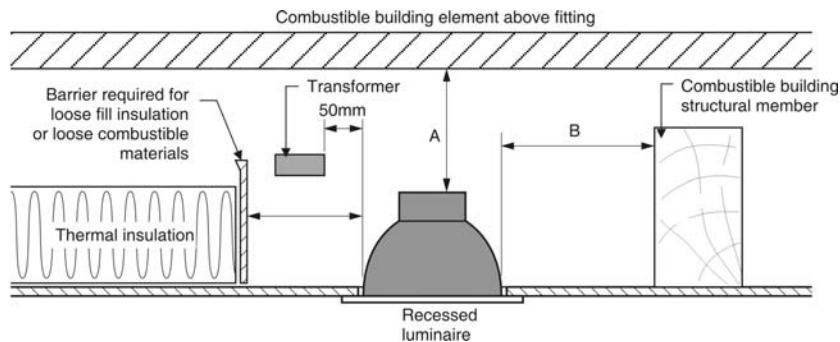
**NOTE:** In the case of a suitably designed luminaire, the installation instructions may specify that no clearance is required.

Recessed luminaires and their auxiliary equipment shall be installed in such a manner that necessary cooling air movement through or around the luminaire is not impaired by thermal insulation or other material.

Where thermal insulation is of a type that is not fixed in position, e.g. loose fill, a barrier or guard constructed of fire-resistant material shall be provided and secured in position to maintain the necessary clearance (see sketch below).

Where thermal insulation may reasonably be expected to be installed in the space containing a recessed luminaire, the luminaire shall be installed in such a manner as to provide for the subsequent installation of thermal insulation.

Recessed luminaires shall be installed in accordance with (a) or (b), or provided with equivalent protective measures, where there is a likelihood of extraneous combustible material, e.g. leaves or vermin debris etc., collecting on or around the luminaire.



DEFAULT MINIMUM CLEARANCES FOR RECESSED LUMINAIRES		
Dimension	Incandescent lamp	Halogen lamp
A - clearance above luminaire	50 mm	200 mm
B - side clearance to structural member	100 mm	200 mm
C - clearance to thermal insulation	50 mm	200 mm
D - clearance to supply transformer	50 mm	

### IMPORTANT NOTE: HEALTH & SAFETY REGULATION

In terms of the Electrical Installation Regulations of the Occupational Health and Safety Act (OHS Act), all electrical installation work shall be installed in accordance with the mandatory safety standard SANS 10142-1, also known as the Code of Practice for the Wiring of Premises. For more information contact: Electrical Contractors' Association (S.A) [www.ecasa.co.za](http://www.ecasa.co.za)

#### CORPORATE MEMBERS



Administered by



Contact our members for products and services that meet the requirements of quality, performance and safety as set by the Thermal Insulation Association of Southern Africa (TIASA).

For a comprehensive list of Insulation Contractors, Distributors, Manufacturers, Suppliers & Specialists please visit: [www.tiasa.org.za](http://www.tiasa.org.za)  
Office: (011) 805 5002.