

## Safe installation of insulation materials

(including metallic foil and bulk insulation)

This advisory information applies to:

- Builders, owner builders, insulation contractors and home owners
- New building work on any class or type of building
- Renovations or improvements of existing buildings

There are many different types of insulation, including both loose and fitted varieties. Insulation can also be made from a variety of products, including cellulose, fibreglass, metal foil sheeting and combinations of these.

Ceiling insulation in the form of loose fill, batts or foil sheets is laid on top of the ceiling lining to reduce heat flow out of a room. However if not installed correctly, ceiling insulation can create electrocution hazards and cause house fires.

### Metallic foil type insulation installed in ceiling spaces

The risks associated with the installation of metallic foil insulation in ceilings are significant as this type of insulation can conduct electricity. The key to safe installation of reflective insulation is to keep it away from cables, electrical power outlets or lights.

- If not properly installed, foil insulation can cause areas of the roof space to become live with electricity. This is a danger to workers installing the insulation and individuals stepping into the roof space. In some cases, gutters and fixtures around the home may also carry an electrical current.
- Use of foil insulation over ceiling joists or beneath floor joists is *not recommended* in Tasmania as other insulation products are more appropriate to achieve required levels of thermal efficiency. Foil sheeting can also conceal building faults, making it almost impossible for inspectors to find potential structural, electrical, or plumbing defects
- Metallic or other conductive fasteners must not be used to install metallic foil ceiling insulation to the structure of a building. Penetration of a live cable by a staple, nail or similar conductive fixing can cause that metallic sheet to become live with the risk of electrocution of workers and occupants
- If you own a building with foil insulation in the ceiling and need to access your ceiling space, turn your power off at the main switchboard. Use a torch and if you have a concern, contact a licensed electrical contractor for an inspection to determine any electrical issues.

### Metallic foil used as a roof or wall wrap

As foil faced reflective insulation is conductive, care must also be taken when installing under metal or tiled roofs. Avoid potential contact with electrical cables and fittings and turn off mains power before starting work.

Similar care should also be taken when installing reflective foil (to serve as a vapour barrier or for thermal efficiency) on walls or a structural framework.

### Bulk insulation (glasswool, rockwool batts)

- Install insulation materials according to the manufacturer's instructions

- If the electrical wiring is already energised, before commencing insulation installation, ensure that the mains power is isolated and tagged.
- Never install bulk thermal insulation over the top of recessed light fittings or exhaust fans
- Do not disturb electrical cables or electrical equipment during installation of insulation. If any wiring has -
  - loose connections,
  - exposed wires,
  - cable insulation is frayed or missing
 then it must not be touched. Stop all work and contact a licensed electrical contractor.

### **General recommendations for safe installation of insulation**

- Perform an assessment of the electrical risks *before* ceiling insulation takes place
- Ensure that all employees or contractors are trained in performing a risk assessment and understand how to implement any controls to prevent exposure to electrical risks
- Australian New Zealand Standard AS/NZS 3000:2007 *Electrical Wiring Rules* provides guidance on the separation of electrical equipment and insulation materials. Check that electricians and insulation installers working in the roof space of your house follow the provisions of this standard
- Ensure that thermal insulation in roof spaces is kept clear of recessed electrical fittings. If you have recessed downlights or exhaust fans in particular, ensure that there is no chance of the insulation coming into contact with the electrical fittings and causing overheating.

### **Tips to avoid trouble with electricity**

- Electrical safety regulations specify that **only** licensed electrical workers may carry out electrical work.
- Don't attempt your own electrical work its illegal if you are not appropriately licensed - it's dangerous.
- If you find damaged electrical equipment that is wired in permanently, only licensed electrical contractors can carry out repairs.
- Safety switches (also known as "residual current devices") are not a substitute for a quality electrical installation; it's not worth the risk to cut corners
- Long leads and extension cords used on building sites must comply with the relevant Australian Standard
- Take care when performing home handiwork - do you really know what's behind the wall you're about to drill into?
- Keep electrical appliances away from water. Mixing water with electricity can be fatal.
- Always follow manufacturer's instructions for the safe use of electrical appliances

## **Further reading on insulation installation:**

The ICANZ Insulation Handbook – Part 2: Professional Installation Guide – Version 2 is freely available from the website of the [Insulation Council of Australia and New Zealand \(ICANZ\)](#).

## **Information on electrical safety matters contact:**

[Worksafe Tasmania](#)

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