

ELECTRICAL HAZARDS WHEN WORKING IN CEILING SPACES

This guidance note has been developed to remind both electrical and non-electrical workers of the risks of electric shock when entering ceiling spaces of properties. Electric shock arising from contact with damaged or exposed energized (live) wiring or equipment could lead to serious injury or death.

MANAGING THE RISKS

Electricity is a significant hazard. Before starting any work, turn off all electricity to the property at the main switchboard and take steps to prevent the electricity from being turned back on while work is in progress.

Where solar photo voltaic (PV) systems are installed, supply cables from the solar cells on the roof to the inverter unit will be live when the solar cells are generating electricity. For this reason, care must be taken when working around these cables.

Care must also be taken when working in ceiling spaces to minimize or avoid contact with exposed conductive parts such as guttering, roof sheeting or metal battens as these could be live if there is a fault with the electrical wiring.

ELECTRICAL SOURCES IN CEILING SPACES

Sources of electricity that may be present within a ceiling space include:

- Electrical wiring powering various circuits within the property itself such as lighting, power points, hot water systems, ovens and air conditioners etc.
- Electrical wiring that may be installed within the ceiling space but powering another part of property such as an extension, garage, granny flat or duplex attached to the same property.
- Electrical wiring from solar/battery storage systems
- Electrical wiring (consumer mains) that connect overhead service lines (street supply) to the electricity meter box.

PRIOR TO ENTERING THE CEILING SPACE

Before entering the ceiling space, turn the electricity off. Once all electricity has been turned off, complete a pre-work risk assessment of the roof cavity by looking around the ceiling space to identify hazards that may pose risks. These may include:

- high temperatures
- evidence of vermin



- sharp objects
- asbestos
- type of lighting
- type of insulation material
- accessibility to the work area (e.g. cramped and awkward positions)
- location of electrical wiring and water or gas piping.

CARRYING OUT WORK IN CEILING SPACES

Temperatures can fluctuate widely, from extreme heat to freezing cold. When working in a ceiling space, individuals need to be aware of how the weather could impact on their health and safety. Summer temperatures often reach dangerous levels, with the enclosed ceiling space climbing to an even higher temperature than the outside air.

As roofs typically contain poor ventilation, those working in ceiling spaces may succumb to heat exhaustion and a lack of breathable air due to extreme weather conditions. It is therefore crucial that those working in these areas monitor the temperature regularly, and vacate the space if feeling hot, dizzy and dehydrated.

In the warmer months, consider scheduling work earlier in the day and ensure someone is aware of where you are and contact with them is maintained until work is completed.

Other considerations to be made when carrying out work in ceiling spaces include:

- taking additional lighting (e.g. torch) with you as the lighting is generally poor in ceiling spaces
- taking care accessing and traversing the work area, avoiding tripping over debris, material and the ceiling trusses
- step carefully on ceiling joists or other beams – not the ceiling material (i.e. Gyprock sheeting) – to avoid risk of falling or injury
- using/providing appropriate tools – preferably manual or battery-operated tools
- being aware of the location of electrical cables, fittings and equipment and avoiding contact with them
- ensuring that, if fixing points are required (e.g. saddling TV aerial cable in place), fixings are well clear of all electrical cables and equipment
- making sure you do not damage any electrical cables or electrical equipment. Please note: if any electrical cable or equipment is damaged, consult with the owner and engage a licensed electrical contractor to inspect the installation.
- wearing appropriate, well maintained and correctly fitted personal protective equipment when working in dusty ceiling spaces, including:



- a half-face (class P1 or P2) disposable particulate respirator, in accordance with AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment
- a head-covering and goggles, to avoid eye irritation
- long-sleeved, loose-fitting clothing and gloves, to minimize skin contact with insulation material
- wearing appropriate footwear
- keeping your work areas clean and clear of fibers and dust and place waste in plastic bags capable of containing the dust.

COMPLETION OF WORK IN THE CEILING SPACE

Once work has been completed:

- replace any insulation material that may have been disturbed or moved for access to the work area, ensuring that it is not covering any electrical fittings or equipment, especially downlights
- dispose of debris and waste appropriately

wash your hands, face, neck and hair, with soap and water.

IMPORTANT NOTES

- Switching OFF power at the meter box does not turn off electricity supply from the street to the meter box. This means the incoming overhead service lines and the consumer mains will still be live. If you find any damaged wiring or appliances within the ceiling space, exit safely and report it to the owner or person in control of the property in order for proper repairs to be organized.
- Isolating the solar power system at the inverter does not isolate all power. Power will continue to be generated by the panels and supplied to the inverter. This means the electrical wiring that connects the solar panels to the inverter will still be live.
- Electrical work must only be carried out by a licensed electrician who has the necessary training and experience to undertake the task.

FURTHER INFORMATION

See the WorkSafe ACT [Managing Electrical Risks in the Workplace](#) Code of Practice for further information.

