

SAFE WORK ON ROOFS

INFORMATION SHEET

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This Information Sheet provides advice on the hazards and control measures associated with work on existing roofs, including working at height, roof access, fragile roofs, electricity, manual tasks, falling objects, exposure to heat and sunlight.



What is work on roofs?

Many activities carried out on roofs are considered 'construction work'. This includes work carried out in connection with altering, converting, renovating, repairing, maintaining, demolishing or dismantling a roof of a structure. Examples of these activities include tiling, roofing restoration and installing solar panels.

Minor work on roofs that is not considered 'construction work', for example cleaning roof gutters or replacing individual roof tiles, can also have the same hazards, especially the risk of falls.



When does work on roofs become high risk construction work?

Construction work on roofs is high risk construction work when it involves, for example:

- a risk of a person falling more than two metres¹
- demolition of an element of a structure that is load-bearing or otherwise related to the physical integrity of the structure, like bracing on a roof
- involves, or is likely to involve, the disturbance of asbestos, or
- is carried out on or near energised electrical installations or services.

A safe work method statement (SWMS) must be prepared for high risk construction work outlining the measures used to control risks. Relevant workers must be involved in the development of the SWMS.



Further information on SWMS is in the [Code of Practice: Construction work](#) and [Information Sheet: SWMS for high risk construction work](#).



What do I need to do?

You must eliminate or minimise risks to health and safety so far as is reasonably practicable even if the roof work only takes a few minutes. Before starting work on a roof, identify the hazards and assess the risks involved so you can plan how to manage them.

Many incidents can be avoided if suitable equipment is used and if those doing the work are consulted about the hazards and risks and given adequate information, instruction, training and supervision.



What are the main hazards and control measures?

Falls

Falls from height are the major cause of death and injury when working on roofs.

Hazards to consider in managing fall risks include:

- unprotected edges
- fragile surfaces, skylights, holes or vents
- weather conditions such as wind and rain (for example being blown over the edge or slipping on a wet roof surface)
- trip hazards (for example roof components and protrusions), and
- overbalancing or losing grip on steep pitched or sloping roofs.

Workers such as electricians, plumbers, pest control operators, installers of roof aerials, solar panels and air-conditioning systems, can trip and fall on roofs, through roofs and openings or while accessing or exiting roof areas.

Falls from even low heights can leave workers with permanent and debilitating injuries such as fractures, spinal cord injuries, concussion and brain damage. The risk of serious injury or death from a fall increases significantly as working heights increase.

¹ Note: in South Australia the fall height limit for high risk construction work is three metres.

The risk of falls must be managed using the most effective control measures that are reasonably practicable, in accordance with the hierarchy of controls. If a single control measure is not enough, a combination of control measures can be used. In order of the hierarchy of control, control measures include:

- eliminating the risk of falls by avoiding the need to work at height, for example installing air-conditioning and similar units at ground level, using devices with extension handles to reach items on or near the roof
- reducing the amount of time spent working on roofs
- if working at height cannot be avoided, providing the following safe systems of work:
 - fall prevention devices. Examples include roof safety mesh, guard railing, scaffolding or elevating work platforms
 - if fall prevention devices are not reasonably practicable, use work positioning systems. Examples include travel restraints—these are designed to prevent workers from reaching an edge where they could fall, or
 - if work positioning systems are not reasonably practicable, use fall-arrest systems. Examples include catch platforms, individual fall-arrest systems with harnesses and anchor points and safety nets—these are designed to reduce the severity of injury in a fall.

For minor roof tasks of short duration (less than a couple of hours) that are carried out in good weather conditions on a standard single storey roof where the roof itself is flat or almost flat, structurally stable and non-slippery, safe work procedures (e.g. ensuring workers maintain a 2 metre distance from all exposed edges when working on the roof) and the safe use of ladders may be sufficient to minimise the risk of a fall.



Further information on falls is in the [Code of Practice: Managing the risk of falls at workplaces](#), the [Code of Practice: Preventing falls in housing construction](#) and [Scaffolds and scaffolding work Guidance materials](#).

Roof access

Careful planning and using the correct method and suitable equipment to access roofs will reduce the risk of falls when working on a roof. Methods for providing roof access include:

- scaffold access towers
- stair towers
- industrial grade secured ladders, and
- roof access hatches.

Where there is no permanent access to roof areas, provide properly constructed temporary access with clearly signposted access points on roof edge protection. Ensure that stepping onto the roof can be done safely and that the landing place is firm, stable and free of obstructions.

Fragile Roofs

All roofs should be treated as fragile until a competent person has confirmed they are not. No sheeted roof, no matter what the material, should be relied on to bear the weight of a person. This includes the roof ridge and purlins.

Roofs are likely to be fragile if they are constructed of the following materials:

- asbestos roofing sheets
- polycarbonate or plastic commonly used in skylights
- roof lights, particularly those in the roof plane that can be difficult to see in certain light conditions or when hidden by paint
- fibre cement sheets
- liner panels on built-up sheeted roofs
- metal sheets and fasteners where corroded
- glass, including wired glass
- chipboard or similar material where rotted
- wood slabs, slates and tiles.

Protection must be provided if there is a risk of falling through the roof and work is being done on the top of the roof. Control measures to prevent injury from work on fragile roofs are similar to methods used for roof work more generally, including using:

- an elevating work platform so workers can avoid standing on the roof itself
- barriers such as guard rails or covers that are secured and labelled with a warning
- guard rails fitted to all work and access staging or platforms
- walkways or crawl boards of a suitable size and strength

- staging on the roof surface to spread the loads
- safety mesh secured under fragile roofing or skylights. If safety mesh is used, ensure it:
 - conforms to AS/NZS 4389:2015 *Roof safety mesh*
 - is installed by a competent person in a safe manner and in accordance with the manufacturer's instructions
 - has its integrity inspected by a competent person prior to roof maintenance or removal
 - is covered by the roof cladding as soon as reasonably practicable after it has been installed
- a harness system with adequate anchorage points, along with appropriate training and supervision. Additional trip hazards are created by wearing harnesses - workers need to be aware of taking extra care with their use. The training should include how to rescue someone who falls while using a fall arrest system.

Electricity

Working on roofs and near electricity is a major risk. This includes entering ceiling spaces. Conductive material such as guttering, roof sheeting or metal battens can become live if they come close enough or in contact with overhead electrical wiring or if there is a fault with the electrical wiring in the vicinity.

Before starting work, ensure the electrical supply to the property is isolated and that it will not be turned on while work is in progress. Use battery powered tools on the roof.

Exclusion zones for working near incoming service lines and overhead power lines must be maintained at all times.



Further information is in the [General guide for working in the vicinity of overhead and underground electric lines](#).

Manual handling and lifting

Injuries can occur when doing hazardous manual tasks such as manually lifting plant and equipment (for example extractor fans to be mounted on a roof). Workers can be injured by overbalancing and falling from the roof or ladder, or being struck by dropped equipment. Workers can also trip and fall if carrying loads that obstruct their view or if there are obstacles left in traffic areas (for example building materials or electrical cords).

The risk of injury can be minimised by using mechanical lifting equipment such as cranes, elevating work platforms, tile elevators and builders' hoists. Ensure ground conditions are suitable for plant and check lifting gear inspection records before use. Determine the appropriate lifting technique for long roof sheets and method of lifting long purlins.

If tile elevators or builders' hoists are used, consider the risk of manual handling injuries from:

- installation and removal of cladding, or
- manually loading the elevator or hoist.

When using, installing or removing mechanical lifting equipment, effective roof-edge protection should be maintained. If parts of the edge protection are removed, alternative protection measures should be provided and the removed components should be replaced as soon as the equipment is installed.

i Further information on controlling the risks of manual handling is in the [Code of Practice: Hazardous Manual Tasks](#).

Falling objects

Examples where there is a risk of injury from falling objects include:

- a hole or gap in the safety mesh, allowing material to fall through
- a gap between the top of the roof cladding and the bottom of a toe-board or infill panel, (for example to slide roof cladding onto the roof), and
- working from elevated structures such as working platforms, ladders or scaffolding.

Controls to reduce the risk of objects falling include:

- implementing safe methods for raising and lowering objects
- modifying design (for example toe-boards, chutes and splash plates)
- installing secure physical barriers to prevent objects falling freely from the structure
- using lanyards on tools
- installing screens, overhead protection, and protected walkways
- housekeeping floors and access ways, and
- limiting access to overhead work by setting up exclusion zones.

Working in heat

Working on roofs can cause heat related illnesses and possible dehydration due to:

- exposure to the elements and the radiant temperature of surroundings when working externally on a roof, and
- exposure to high temperatures when working in an enclosed roof cavity in hot weather (for example installing insulation).

Controls to reduce the risk of heat illnesses include:

- using mechanical aids to reduce physical exertion, and mechanical fans when working in roof cavities
- scheduling tasks for cooler parts of the day
- reducing time spent working in heat, for example job rotation
- providing rest breaks in a shaded, cool area (air conditioned where possible) and scheduling extra breaks if required
- supplying adequate and readily accessible cool drinking water, and
- wearing lightweight clothing.

Solar ultraviolet radiation

Working on roofs can expose workers to high levels of solar ultraviolet radiation (UVR) from exposure to direct sunlight and reflective surfaces such as concrete, metal and glass in roofing materials.

Controls to minimise solar UVR exposure include:

- carrying out roof work earlier in the morning or later in the day
- rotating or sharing between external and internal work
- wearing a hat, sunglasses and applying 30+ SPF sunscreen, and
- working in the shade or under overhead protection (although be aware of potential exposure from nearby reflective surfaces).

Where reasonably practicable, workers should wear clothing that covers as much skin as possible. Examples include loose-weave fabric shirts with a collar and long sleeves, long trousers and hats with broad brims or caps with 'legionnaire' style peak and flap at the back.



Further information is in the [Guide on exposure to solar ultraviolet radiation \(UVR\)](#).



Further information

For further information see the [Code of Practice: Construction work](#) and the Safe Work Australia website www.swa.gov.au.