

Technical solution sheet 1

Working safely at height during solar installations



Planning a safe approach to installing photovoltaic systems

Falls while working at height remains the most serious risk associated with solar panel installations, so it is crucial to assess all risks and plan a safe approach to the installation.

Follow this four-step risk management process to ensure hazards are identified, risks are assessed and controlled, and that employers fulfil their duty to monitor, review and revise controls when required:

Figure 1: The four-step risk management process.



This is part of a series developed with WorkSafe to help installers in our programs work safely in the solar industry.

Use this sheet and others in this series to plan safe systems of work while installing photovoltaic systems.

In series 1:

- 1.1 Working safely at height during solar installations (this sheet)**
- 1.2 Edge protection – Working at height
- 1.3 Manual handling of solar panels, heavy and bulky items
- 1.4 Working safely with ladders
- 1.5 Safe work practices using elevating work platforms
- 1.6 Falls through skylights, fragile roofs, voids and penetrations
- 1.7 Working near asbestos-containing material

See:
solar.vic.gov.au/safety-and-quality



Step 1: Identify hazards

The first step in the risk management process is to identify fall hazards. Start by identifying all tasks an employee is required to undertake at a workplace that involves the risk of falling more than two metres while installing solar panels:

- » on any plant or structure being constructed, inspected, tested, maintained, repaired, or cleaned
- » on a fragile surface – for example, cement sheeting roofs, rusty metal roofs, fibreglass sheeting roofs and skylights
- » using equipment to gain access to an elevated level or to undertake the task at an elevated level – for example, scaffolds or portable ladders
- » on a sloping surface on which it is difficult to maintain balance – for example, on glazed tiles or wet steel roof sheets
- » near an unprotected edge – for example, near perimeters without guard railing or incomplete stairwells
- » near an unprotected hole, trench, shaft or pit that is of sufficient dimensions to allow a person to fall into the hole, trench, shaft or pit.

Image captions:

1. Consulting with co-workers results in better risk control measures.

2 – 5. A range of onsite safety equipment and edge protection systems that comply with manufacturers' instructions and Australian Standards.

Step 2: Assess risks

Once the hazards have been identified, it is important to assess the risk they pose and determine appropriate control measures. This involves looking at how the hazards might cause harm.

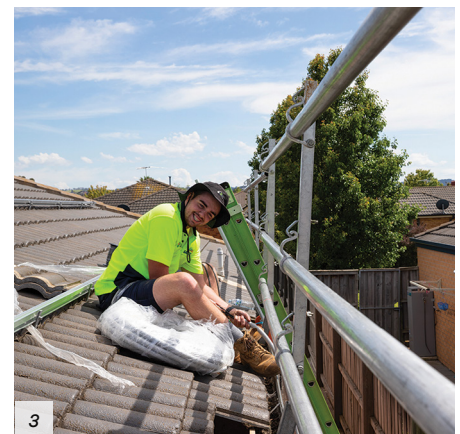
The risk of a fall while performing solar installations can be assessed by determining:

- » the likelihood of a fall occurring
- » the potential distance a person or an object could fall
- » the extent of harm that a person could receive in the event of a fall
- » the potential for people other than workers to be harmed, for example, pedestrians or homeowners.

Employers and self-employed persons must provide their workers with a safe work method statement (SWMS) before undertaking high-risk construction work (HRCW). A SWMS is a safety planning tool that identifies the hazards and risks and documents the control measures necessary to manage those risks.

The SWMS should describe to employees in clear terms how risks from the work will be effectively controlled to enable the work to be done safely. Consultation with employees involved in carrying out high-risk construction work must be part of the process of determining risk controls during the SWMS preparation process.

See the WorkSafe website for more information on when and how to complete a SWMS for construction activities: [worksafe.vic.gov.au/resources/safe-work-method-statements-swms](https://www.worksafe.vic.gov.au/resources/safe-work-method-statements-swms)





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Step 3: Control risks

In line with the duty to provide a workplace that is safe and without risk to health, employers must eliminate risks associated with a fall greater than two metres so far as is reasonably practicable.

Where elimination is not reasonably practicable, reduction of risk is to be achieved by working through the successive stages of the hierarchy of control for the prevention of falls greater than two metres.

Regulation 44 of the Occupational Health and Safety Regulations 2017 (OHS Regulations) outlines the hierarchy for controlling risks of falls greater than two metres.

Some guiding principles are:

- » Elimination of the hazard is always the best approach.
- » A combination of controls may need to be used to effectively eliminate the hazard, or if elimination is not possible, to minimise the risk so far as is reasonably practicable.

Remember: doing nothing is not an option.

Table 1 Hierarchy of control for the prevention of falls greater than two metres

Control level	Description	Example
1	Eliminate the risk	Eliminate the risk of a fall by undertaking work at ground level.
2	Use a passive fall prevention device	Use of systems such as: edge protection systems, scaffolding, perimeter screens, Elevating Work Platforms.
3	Use a work positioning system	Use of an industrial rope access system or travel restraint system.
4	Use a fall arrest system	Use of an industrial safety net, catch platforms or safety harness systems (other than travel restraint systems).
5	Use a fixed or portable ladder, or implement administrative controls	If the above measures are not reasonably practicable for the task, it may be appropriate to use a fixed or portable ladder, provided it is fit for purpose, appropriate for the duration of the task and set up in the correct manner.

Step 4: Review and revise controls

Once the risk controls are in place it is important to maintain them and regularly check that they are working as planned by continuing to prevent or adequately control the risks associated with falls.

An employer has a duty to review and, if necessary, revise control measures; when making alterations to any plant or system of work that is likely to result in a fall; after an incident has occurred; if the control measures are inadequate; or at the request of a Health and Safety Representative.

Your review of the control measures should include:

- » monitoring activities and work practices
- » frequent inspections of physical controls such as edge protection systems, scaffolding and guardrails to ensure they are properly installed, used, and maintained
- » testing of equipment
- » visual checks to ensure risk controls that rely on human behaviour are being properly applied by employees
- » any necessary remedial work to ensure physical controls continue to work effectively.

Your actions shouldn't stop at Step 4. You should repeat this process often to make sure your risk controls are working.

Note: When utilising any hierarchy of control measure, except for elimination, an employer is required to establish an emergency procedure prior to commencement of any task. The emergency procedure must enable both the provision of first aid to, and rescue of, an employee who has suffered a fall and must be carried out immediately upon an incident occurring.

Important resources

See the WorkSafe website for:

- » Compliance code: Prevention of falls in general construction:
worksafe.vic.gov.au/resources/compliance-code-prevention-falls-general-construction
- » Compliance code: Prevention of falls in housing construction:
worksafe.vic.gov.au/resources/compliance-code-prevention-falls-housing-construction
- » A guide to falls prevention:
worksafe.vic.gov.au/resources/guide-falls-prevention
- » Safe work method statements (SWMS):
worksafe.vic.gov.au/resources/safe-work-method-statements-swms
- » The hierarchy of control:
worksafe.vic.gov.au/hierarchy-control

See also:

- » Occupational Health and Safety Regulations 2017 (OHS Regulations):
legislation.vic.gov.au/in-force/statutory-rules/occupational-health-and-safety-regulations-2017

Any questions?

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worksafe.vic.gov.au

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