

SAFE WORK ON ROOFS

COMMERCIAL AND INDUSTRIAL BUILDINGS

CODE OF PRACTICE 2008

DRAFT ONLY

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This publication may contain occupational health and safety and workers compensation information. It may include some of your obligations under the various legislations that WorkCover NSW administers. To ensure you comply with your legal obligations you must refer to the appropriate legislation.

Information on the latest laws can be checked by visiting the NSW legislation website (www.legislation.nsw.gov.au) or by contacting the free hotline service on 02 9321 3333.

This publication does not represent a comprehensive statement of the law as it applies to particular problems or to individuals or as a substitute for legal advice. You should seek independent legal advice if you need assistance on the application of the law to your situation.

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1. WHAT IS AN APPROVED INDUSTRY CODE OF PRACTICE?

An approved industry code of practice is a practical guide to employers and others who have duties under the *Occupational Health and Safety Act 2000* (OHS Act) and the *Occupational Health and Safety Regulation 2001* (OHS Regulation) with respect to occupational health, safety and welfare.

An industry code of practice is approved by the Minister administering the OHS Act. It comes into force on the day specified in the code or, if no day is specified, on the day it is published in the *NSW Government Gazette*. An approved industry code of practice may be amended from time to time (or it may be revoked) by publication in the gazette.

An approved industry code of practice should be observed unless an alternative course of action that achieves the same or a better level of health, safety and welfare at work is being followed.

An approved industry code of practice is intended to be used in conjunction with the requirements of the OHS Act and the OHS Regulation but does not have the same legal force. It is advisory rather than mandatory. However, in legal proceedings under the OHS Act or OHS Regulation, failure to observe a relevant approved industry code of practice is admissible as evidence concerning an offence under the OHS Act or OHS Regulation.

A WorkCover NSW inspector can draw attention to an approved industry code of practice in an improvement or prohibition notice as a way of indicating the measures that could be taken to remedy an alleged contravention or non-compliance with the OHS Act or OHS Regulation. Failure to comply with an improvement or prohibition notice without reasonable excuse is an offence.

In summary, an approved industry code of practice:

- gives practical guidance on how health, safety and welfare at work can be achieved
- should be observed unless an alternative course of action that achieves the same or a better level of health, safety and welfare in the workplace is being followed
- can be referred to in support of the preventive enforcement provisions of the OHS Act or OHS Regulation
- can be used as evidence to support a prosecution for failing to comply with or contravening the OHS Act or OHS Regulation.

2. WHAT IS THIS CODE OF PRACTICE ABOUT?

This industry code of practice has been produced by WorkCover NSW to provide employers, self-employed persons and workers with practical advice on preventing injury to persons engaged in work on roofs. This is the second edition of this code of practice and replaces and revokes the code published in 1993. It has been updated to reflect changes in legislation since that time.

This code of practice has been developed by a tripartite industry working party and has involved extensive consultation with members of the construction industry, including specific industry-sector representatives.

The title of this code of practice is the *Code of practice for safe work on roofs Part 1 – commercial and industrial buildings*.

The purpose of this code of practice is to set out practical guidance to prevent injury to persons engaged in work on roofs.

The scope of this code of practice:

- a. applies to the planning, preparation and conduct of work for the installation, maintenance and removal of roof coverings, and the movement of those working on roofs on commercial and industrial buildings
- b. does not apply to work carried out by emergency service personnel as part of emergency procedures, including the state emergency service, fire, police and ambulance personnel during emergency operations
- c. does not apply to work associated with the erection of the roof supporting structure.

This is an industry code of practice approved by the Minister under section 43 of the OHS Act on the recommendation of WorkCover NSW.

This code of practice takes effect on [XXXXXXX].

The following Australian Standards (which are also New Zealand Standards), as amended from time to time, are incorporated in this code of practice as provided by section 41(2) of the OHS Act:

- d. *AS/NZS 4994.1(Int) Temporary roof edge protection Part 1 – General requirements*
- e. *AS/NZS 4994.2(Int) Temporary roof edge protection Part 2 – Installation and dismantling*
- f. *AS/NZS 4389 Safety mesh.*

3. CONSULTATION AND RISK MANAGEMENT

The OHS Act and the OHS Regulation require employers to address workplace health and safety through a process of risk management and consultation. Self-employed persons must address workplace health and safety through a process of risk management and coordination – see 3.1.4, coordination of responsibilities.

To effectively implement this code of practice, employers should be aware of these requirements and have procedures in place to apply them.

Employers and self-employed persons are advised to consult the OHS Act and the OHS Regulation, as well as the *Code of practice for Occupational Health and Safety Consultation* and the *Code of practice for Risk Assessment* for details of these requirements and how they can be met.

3.1 Consultation at the workplace

Employers must consult with their workers when taking steps to assess and control workplace risks. They must set up consultation arrangements and develop consultation procedures.

3.1.1 Consultation arrangements

The OHS Act provides three alternatives for consultation arrangements.

Arrangement	Number of workers	Requirement
OHS committee	20 or more workers	<ul style="list-style-type: none"> requested by a majority of workers direction by WorkCover.
OHS representative	any size	<ul style="list-style-type: none"> at least one worker requests an election, or direction by WorkCover.
Other agreed arrangements	any size	<ul style="list-style-type: none"> agreed to by both the employer and workers (in a small workplace it may be a regular safety meeting with workers)

Before using this code, an employer should ensure that consultation arrangements are in place. An employer may initiate the establishment of an OHS committee or the election of an OHS representative if the workers have not made such a request. When the consultation arrangements have been decided, employers must record them and advise all existing and new workers.

After setting up the consultation arrangements, employers must consider when and how these consultation arrangements need to be applied.

3.1.2 When should consultation be undertaken?

Employers must consult their workers when decisions are being considered that may affect workers' health, safety or welfare. This includes assessing, reviewing and monitoring risks to health and safety. This may be done by:

- a. eliminating or controlling risks to health and safety
- b. planning for new premises, or modifying existing premises or plant
- c. purchasing new plant, equipment or substances
- d. planning, designing or changing work tasks or jobs
- e. determining or reviewing workplace amenities
- f. determining or reviewing consultation arrangements.

Other decisions that could also affect health and safety include:

- a. coordinating and communicating with subcontractors in the workplace
- b. investigating incidents or accidents
- c. developing emergency procedures.

Any procedures that are developed to encompass these activities should incorporate consultation. It may not be practical or reasonable to involve the OHS committee or the OHS representative in, for example, every purchase decision or task change, but they must be consulted on what process is used to ensure that affected workers are consulted.

3.1.3 How should consultation be undertaken?

When engaged in consultation, section 14 of the OHS Act requires employers to:

- a. share all relevant information with their workers – eg if an employer is going to change a work task, workers must be told of any risk to health and safety that may arise and what will be done to eliminate or control these risks
- b. give workers reasonable time to express their views – workers need adequate time to assess the information given to them, obtain relevant safety information and consult with fellow workers to enable them to form their views
- c. value the views of workers and take them into account when the decision is made to resolve the matter – in many cases, agreement will be reached on how the safety issues are to be addressed (when agreement cannot be reached, the employer should explain how the workers' concerns have been addressed).

3.1.4 Coordination of responsibilities

There may be a number of parties involved in a construction project, such as:

- a. the principal contractor
- b. controllers of premises, plant or substances
- c. designers
- d. employers (principal contractors or subcontractors) who employ persons at the site, including labour hire agencies providing persons to the site
- e. self-employed persons
- f. suppliers of plant, materials or prefabricated components
- g. manufacturers of plant.

Where more than one party has responsibilities at a specific workplace, clause 8 of the OHS Regulation requires that each party retain their legal responsibilities and discharge their responsibilities in a coordinated manner.

When coordinating responsibilities, all the parties in the workplace should be aware that:

- a. the person controlling the work has obligations, not only to their workers but also to contractors and their workers
- b. the level of responsibility for health and safety matters is related to the degree of control the person has over the work or premises, regardless of the number of contractors and subcontractors involved
- c. contractors should obtain information on the hazards presented by the roofs located on their premises, such as the presence of brittle roofing, skylights or asbestos. For information on work on asbestos cement roofs, see chapter 7
- d. if asbestos is present, the controller of the premises must update the register of asbestos – see chapter 7
- e. information about health and safety matters must be communicated to those who may be affected by these matters
- f. those affected should be consulted when deciding how to eliminate or control risks.

3.2 Risk management

Careful planning and preparation is the first essential step to ensure that work is done safely. Planning and preparation must involve consultation with all those engaged in the work, and must include the risk assessment and control measures. Planning and preparation should be based on the controls required under clause 56 of the Regulation, '*Prevention of falls from heights – particular risk control measures*'.

3.2.1 Risk assessment and control measures

To determine what risks may arise when the work is being carried out, a hazard identification and risk assessment process must be carried out at the planning and preparation stage by the employer, self employed person or contractor. Safe systems of work must then be put in place to eliminate or control these risks – and these systems must be documented in the safe work method statement (SWMS).

The process of risk management includes:

1. identifying the hazards – eg access to heights above ground level
2. assessing the risks from the hazards – eg serious injury or death
3. using appropriate control measures to eliminate or control the risk
4. reviewing control measures from time to time to ensure their continued effectiveness – including supervising workers to ensure that the control measures are used.

3.2.2 Hierarchy of control measures

Clause 5 of the OHS Regulation prescribes a hierarchy of controls that must be used when eliminating or minimising a risk to health and safety in the workplace.

The hierarchy of controls involves:

- a. eliminating the risk – eg discontinue the activity, don't use the plant, fabricate the roof on the ground and lift into position with a crane
- b. minimising the risk by:
 - i. substituting the system of work or plant (with something safer)
 - ii. isolating the hazard – eg introduce and enforce a restricted work area
 - iii. introducing engineering controls – eg guardrails or scaffolding
 - iv. adopting administrative controls, such as safe work practices – eg hazard warning signs ('persons working above', 'nail gun in use') – and specific training and work instructions – eg for brittle or fragile roofs
 - v. using personal protective equipment (PPE) – eg fall arrest equipment, safety footwear, eye protection.

Eliminating the risk gives the best results and should be adopted where possible. When minimising the risk, the control measures apply in descending order. Usually, the measures higher up in the hierarchy are more effective and require less frequent reviews of the controls than those lower down. In some situations, a combination of control measures may be used, such as engineering means and PPE.

Risk control measures identified by contractors must be incorporated in the SWMS and supplied to the principal contractor, who must include them in the OHS management plan for the site.

3.2.3 Monitor and review risk assessments and control measures

Clauses 12 and 37 of the OHS Regulation states that employers and controllers of premises must review a risk assessment and any measures adopted to control a risk, whenever:

- a. there is evidence that the risk assessment is no longer valid
- b. an injury or illness results from exposure to a hazard to which the risk assessment relates, or
- c. a significant change is planned to the place of work, work practices or work procedures to which the risk assessment relates.

3.2.4 Planning by designer

Architectural and engineering designs of roofs, including the supporting structure and cladding, should take into account whether the work practices necessary to carry out the installation and maintenance of the designs are safe.

The designer should consider:

- a. The use of building methods to reduce work at heights, as far as practicable – eg pre-assembling sections on the ground and installing guard-railing systems or brackets
- b. the use of fall prevention equipment, such as guardrails or guardrail attachments at the perimeter, where appropriate
- c. measures to prevent falls through the roof, such as roof member spacing, safety mesh, and trafficable roof cladding
- d. providing anchorage points for a fall arrest system, where required, for use during installation, subsequent work on the roof and maintenance – see 5.4, fall arrest systems.
- e. the strength of roof members and other elements of the building to which guardrails are attached, or which act as an anchorage point for a fall arrest system
- f. providing permanent safe access to the roof for future maintenance purposes
- g. providing safe access to all sides of the roof.

3.2.5 Planning by the principal contractor

Clause 210 of the OHS Regulation requires a principal contractor to be appointed:

- a. where the cost of the construction work is over \$250,000
- b. where the work involves high-risk construction work (including work at a height above three metres), or
- c. for demolition work or asbestos removal work, for which a licence is required under chapter 10 of the OHS Regulation.

For information on work on asbestos cement roofs and principal contractors, see chapter 8.

Note: In some instances, the roofing contractor may become a principal contractor.

Where the cost of construction work is over \$250,000, the principal contractor must prepare and implement an OHS management plan in accordance with clause 226 of the OHS Regulation.

If a principal contractor is not appointed and the cost of construction is over \$250,000 or it's high-risk construction work, the owner is taken to be the principal contractor. For demolition or asbestos removal work that requires a licence, the person carrying out the work is taken to be the principal contractor.

Before roof operations start, the principal contractor, in consultation with the contractors doing the work, must undertake an assessment of the risks involved in carrying out the work and:

- a. use building methods that reduce work at heights
- b. consider the type and placement of scaffolding required for access and falls prevention
- c. consider the most effective methods of controlling the risk of falls and injury, both at the perimeter and through the roof
- d. ensure that the roof structure is complete and braced
- e. ensure that the strength of the roof members is adequate to support the system to be used for controlling the risks of a fall injury, including, where appropriate, a fall arrest system
- f. provide suitable and safe access to and from the construction site, including the working areas on the roof
- g. place roofing materials in a position on the ground so that risks (including falling material) from moving and lifting to the roof are minimised
- h. position bundles of roof materials to avoid excessive point loading on the structure
- i. provide a firm, level surface for mobile plant
- j. ensure electrical safety and systems of work conform to the recommendations in the *WorkCover Code of practice for electrical practices for construction work*
- k. observe the distances from overhead powerlines recommended in the *Code of practice for work near overhead powerlines*
- l. identify the presence of any asbestos at the worksite or in the roof
- m. ensure that all workers have received appropriate training and instruction
- n. ensure that all contractors and subcontractors have been provided with the parts of the site safety management plan that are relevant to their work on the roof
- o. obtain safe work method statements from the subcontractors.

3.2.6 Planning by contractors

In addition to coordinating with the principal contractor, all contractors doing work must:

- a. undertake an assessment of the risk involved in carrying out the work – see common hazards outlined in chapters 4 –11.
- b. determine the most effective methods of controlling the risk of falls, falling objects and other incidents by taking into account the nature of the work being done, such as:
 - i. the roof work – eg installing the cladding
 - ii. accessory work – eg penetrations, roof capping, interior box gutters
 - iii. perimeter work – eg eaves gutters, box gutters at permanent edge
 - iv. manual raising and lowering of materials, tools and equipment
- c. ensure suitable and safe access to and from the roof
- d. provide a written SWMS, describing how the work is to be done safely – it should take into account an assessment of the risk involved in carrying out the work
- e. position bundles of roof materials to avoid excessive point loading on the structure
- f. develop a system, prior to installing the roof cladding, to ensure that safety mesh (if used) is inspected and certified by a competent person as being installed correctly
- g. install roof-edge protection, anchor points or other fall prevention measures resulting from (b)
- h. ensure that everyone carrying out or affected by the work is provided with appropriate PPE, if required. See 3.1.4, coordination of responsibilities. The use of PPE is the least preferred means of controlling risks. See 3.2.2, hierarchy of control measures.

The contractor should also:

- a. place roofing materials in the most appropriate position to assist in manual handling – see chapter 8
- b. distribute materials and other equipment that is placed on the roof so that excessive point loading on the roof structure is avoided
- c. consider the experience of a worker when allocating tasks so as to minimise risks
- d. as far as reasonably practicable, perform tasks at ground level – this would reduce the risk of workers and objects falling (eg tools)
- e. ensure that electrical safety and systems of work conform to the recommendations of the WorkCover Code of practice for electrical practices for construction work and the *Code of practice for work near overhead powerlines*
- f. implement specific risk controls if slippery, brittle or fragile roofing materials are encountered, or the work involves the removal of asbestos cement – see chapter 7
- g. avoid storing old roofing material on the roof and transfer it from point of removal to the ground
- h. prevent everyone from entering the area below the roof, while any sort of roof work is being carried out, including the raising and lowering of material
- i. minimise skin exposure to sunlight.

3.2.7 Preparing for work to commence

When preparing for the commencement of work, all controls outlined in the OHS management plan, the SWMS and the risk assessments must be put in place and checks made that no new hazards exist.

To control risks, preparing for the commencement of work should include an assessment of:

- a. fall prevention systems – eg scaffolding, guardrails, safety mesh
- b. access to and from the workplace – eg via edge protection systems
- c. the climatic and environmental conditions – eg moisture, lichen or dust on the roof, wind
- d. PPE
- e. induction training
- f. specific instructions for workers
- g. electrical practices – eg portable electrical tools and equipment
- h. emergency and rescue procedures – eg rescuing a worker from a fall arrest harness
- i. the identified dedicated areas for the operation of plant, such as cranes, elevating work platforms, elevators and personnel hoists
- j. the crane placement schedule.

To ensure the necessary control measures are being applied as the construction of the roof progresses, an ongoing assessment of the work should be carried out – eg Is safety mesh correctly installed? Is edge protection erected in the working area before new work begins?

Prior to commencing work on an existing roof, an additional inspection should be conducted to determine:

- a. the presence and condition of safety mesh
- b. the structural soundness of the roof and supporting structures
- c. the fragility of the roof and roof sheets
- d. the presence of asbestos
- e. sky lights.

3.2.8 OHS management plan

Before work commences, where the legislation requires the appointment of a principal contractor, the principal contractor must ensure that a site-specific OHS management plan has been prepared for each place of work at which construction work is to be carried out. The plan must be maintained and kept up-to-date during the course of the work. The principal contractor must provide subcontractors with a copy of relevant parts of the plan and should brief them on the contents of the plan and the risks to which they may be exposed.

The plan must include:

- a. the OHS responsibilities of specific people and/or positions
- b. the arrangements for OHS induction training
- c. the arrangements for managing OHS incidents
- d. site-safety rules and how they are communicated to those on site
- e. SWMS for relevant work activities.

3.2.9 Safe work method statement

The SWMS:

- describe how the work is to be carried out
- identifies the work activities assessed as having safety risks
- identifies the safety risks
- describes the control measures that will be applied to work activities,

and includes a description of the equipment used in the work, the standards or codes to be complied with, the qualifications of the personnel doing the work and training required to do the work.

A SWMS should show the work method in a logical sequence. The hazards associated with each process should be identified, and the measures for controlling these hazards specified. Employees should be involved and consulted during the development and implementation of any SWMS. All persons involved in carrying out the work should understand the SWMS before commencing the work.

The SWMS may be used to nominate the competencies, the number of workers and the items of plant that are required to safely perform the work tasks, together with any permits and licences that are required under the OHS Regulation. It may also be useful to provide copies of relevant documents and training records with the SWMS.

Workers should be consulted during the development and implementation of the SWMS. Before commencing a task, everyone involved in carrying out the work should understand the SWMS.

3.3 Training and supervision

The OHS Regulation places specific requirements upon employers and self-employed persons to help ensure the health and safety of workers on construction sites, in particular those involved in high-risk construction work on roofs. See chapter 8, part 8.2 of the OHS Regulation.

All those involved in work on roofs must be trained to follow systems of work and work practices that enable them to perform their work in a manner that is safe and without risks to the health of themselves and others. Only those who have received training and instruction may carry out work on roofs.

To ensure that safe systems and work practices are being followed, workers and systems of work should be monitored, and refresher training provided. Training and instruction must include:

- a. work activities and site inductions
- b. measures contained in the SWMS, such as:
 - i. methods to load materials onto the roof, and to handle, position and fix materials
 - ii. control measures to prevent injuries or falls, based on the OHS management plan, the SWMS and risk assessments
 - iii. methods to gain access to the roof and all areas of the roof
 - iv. the use, care and storage (according to manufacturers' recommendations) of PPE – including fall arrest systems – and tools and equipment
 - v. the use of plant and associated equipment, including electrical equipment and hazardous substances
- c. procedures in the event of an incident, injury or emergency.

Employers must ensure that workers are provided with such supervision as may be necessary to ensure the health and safety of the workers and anyone else at the employer's workplace. Supervision must be undertaken by a competent person and should take into account the competence, experience and age of each worker.

Supervision is essential to ensure that control measures are applied and SWMS are followed.

4. ACCESS TO ROOFS

Safe access must be provided to all areas in a workplace, including access to different levels and to all parts of the roof. Consideration should be given to:

- a. the use of scaffolds and personnel hoists
- b. any tools and equipment that may be required while on the roof – and the risks of carrying them.

Particular risk control measures are prescribed for brittle or fragile roofs – see chapter 6.

If a ladder is used for access, it should:

- a. have non-slip feet, and be secured at its top and bottom against movement
- b. be positioned on firm, level ground
- c. extend at least one metre above the landing place
- d. be at least three metres clear of powerlines (or any electrical conductors) if it is a metal or wire-reinforced ladder – otherwise use a non-conducting ladder
- e. not be placed so that it requires a person to climb over the top guardrail of any fall prevention equipment.

Elevating work platforms are not intended as a means of access but, in some instances, they may be the safest option to access a roof. If the operator is required to leave the basket of an elevating work platform, they should conform with the procedure specified in AS2550.10, *Cranes, hoist winches Part 10 – Elevating work platforms*.

For further information on the safe use of ladders, see WorkCover's guide *Portable ladders, Working off stepladders* (a position paper) and AS 1892.5 *Portable ladders Part 5 – Selection, safe use and care*.

5. CONTROL MEASURES

5.1 Legislative requirements

Clause 56(1)(a) of the OHS Regulation requires an employer or self-employed person to ensure that risks associated with falls from a height are controlled. They must provide and maintain:

- (i) a stable and securely fenced work platform – eg scaffolding
- (ii) if compliance with subparagraph (i) is not reasonably practicable, secure perimeter screens, fencing, handrails or other forms of physical barriers that are capable of preventing the fall of a person, or
- (iii) if compliance with subparagraph (ii) is not reasonably practicable – other forms of physical restraints that are capable of arresting the fall of a person from a height of more than two metres.

These requirements constitute a 'hierarchy of controls', meaning a particular control measure can only be applied where it is not reasonably practicable to apply the one above it in the hierarchy. Therefore, an employer or self-employed person must apply the first control measure and, if not reasonably practicable to use it, consider the next one – and so on – see clause 5 of the OHS Regulation.

The OHS Regulation does not specify a minimum height at which the control measures must be implemented – risks are associated with working from any elevated position. Where there is a risk of falling, control measures are required. However, if fencing, handrails and the like are impracticable, a restraint or fall arrest system capable of arresting the fall must be used. In some cases, multiple control measures may be appropriate. The reasons why some controls that appear high in the hierarchy are impracticable should be documented.

5.2 Protection at the edge of a roof

5.2.1 Use of scaffolding and guardrail systems

There are many types of purpose-designed roof-edge protection systems, including modified scaffolding. The design requirements for these systems, including the strength to withstand the impact of someone falling against them, are outlined in AS 4994.1 *Temporary roof edge protection for housing and residential buildings Part 1 – General requirements*. Roof-edge protection systems, including the use of scaffolding as roof-edge protection, should conform to the requirements of this standard.

AS 4994.2 *Temporary roof edge protection for housing and residential buildings Part 2 – Installation and dismantling* provides guidance on determining the appropriate type of roof-edge protection system, and explains how to use it. These standards should be used at the planning stages to ensure that systems of work conform to the requirements.

Although these standards are intended for the domestic housing sector, they are also applicable to commercial and industrial buildings. They apply to roofs with a pitch not greater than 35°.

To determine the best type of roof-edge protection, ensure, among other things, that it is strong enough to withstand the force of someone falling on it. The force will depend upon the momentum of the falling person, which in turn depends upon:

- a. the type of roof surface – a person is likely to generate more momentum when falling down a slippery roof
- b. the pitch of the roof – the steeper the pitch, the more speed that is generated
- c. the length from the top chord to the roof-edge protection – a person will generate more speed the further they fall.

Regardless of the pitch of the roof, guardrails, including those on scaffolding, must have a top rail, mid-rail and a toe-board – or a top rail and an infill panel that serves the function of a mid-rail and toe-board. When the pitch of the roof exceeds 26°, infill panels should be used in addition to mid-rails and toe-boards, so that the forces imposed by a falling person is spread along the guardrail and an injury caused by the mid-rail or toe-board is minimised.

The top rail should be at least 900 mm above the working surface. Ensure this height is maintained when the guardrails are erected at the edge of a sloping roof.

When installing safety mesh or other material that spans the roof, a roof-edge protection system that incorporates a platform, including scaffolding, has the advantage of providing a firm surface from which to work.

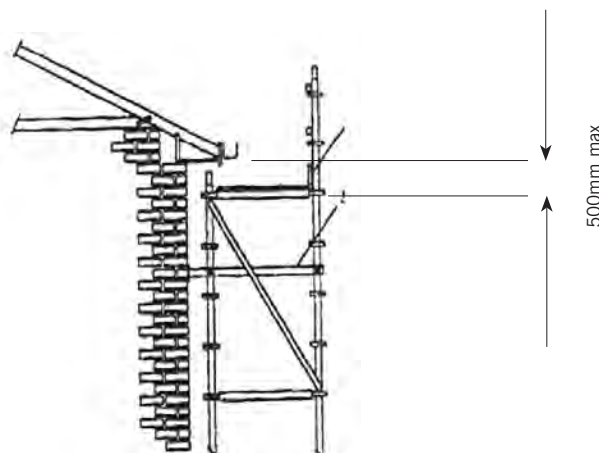
5.2.2 Particular requirements for scaffolding

Clause 58(d) of the OHS Regulation requires the erection and dismantling of scaffolds and temporary erected structures – intended or used to support sheetings, hoardings, guardrails, means of access or egress, or entertainment equipment – be carried out in accordance with AS/NZS 1576.1 1995 *Scaffolding Part 1 – General requirements*.

Scaffolding, when used to provide edge protection, should have working or access platforms brought as close as possible to the underside of the eaves, no lower than 500 mm beneath the edge of the roof. The platform level may be lifted or an intermediate hop-up platform installed between the platform and the edge of the roof.

A person who erects or alters a scaffold from which a person or object can fall four metres or more must hold a scaffolding certificate of competency. There are three certificate levels, dependent upon the complexity of the scaffolding required.

Figure 1 shows a scaffold that has been adapted as a form of roof-edge protection.



5.2.3 Guardrail systems

Before installing a guardrail system at the edge of a roof, ensure that it is suitable for that particular roof. Ensure that the supporting members can support the load of a person falling against the rails. The roof design engineer should be consulted for advice on the roof's compatibility with different guardrail systems.

Ensure that the system can be erected to follow the roof's profile, and will contain no gaps through which a person could fall. Buildings with unusual plan profiles or roof construction may pose additional hazards. If a system is not available to fully secure the edge, gaps between the roof and the guardrail system should be in-filled on-site.

Before commencing work on a roof, a guardrail system should be in place and it should not be removed until all work on the roof (or a section of the roof) is complete. If the guardrail is removed from a section of roof, access to that section should be prevented.

A method must be developed that allows the guardrail system to be safely installed and dismantled. If it does not involve scaffolds, a temporary work platform may be required, such as an elevating work platform.

Similarly, if the guardrail system is to be removed upon completion of the work, a safe method of dismantling must be developed. Some guardrail systems use sacrificial brackets that are left connected when the roof is completed. A competent person should assess both the brackets and their fixings before they are to be used for subsequent work on the roof.

Guardrail systems should only be erected by a competent person.

Figures 2 and 3 indicate the use of various types of roof-edge protection systems according to the pitch of the roof. More detailed examples are given in AS 4494.2 *Temporary roof edge protection for housing and residential buildings Part 2 – Installation and dismantling*.

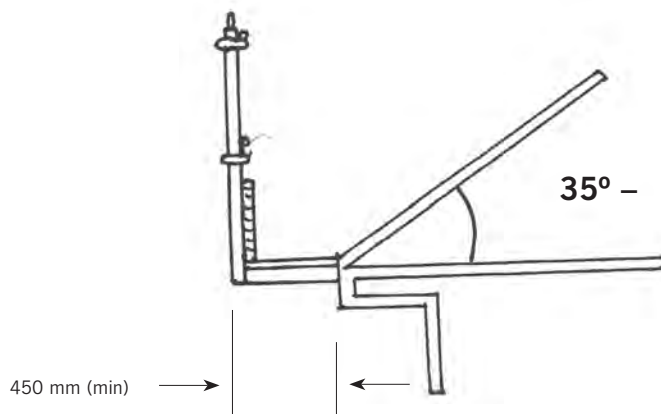


Figure 2: Roofs with pitch greater than 35° and less than 45° require a two-plank platform guardrail system (end guardrail omitted for clarity)

5.2.4 Roofs with a pitch greater than 35 degrees

Where the pitch of the roof exceeds 35° (but is less than 45°), a platform should be constructed to minimise the likelihood of a person falling onto the top rail, or over the guardrailing system – see figure 2. The platform should be no less than 450 mm wide (two scaffold planks), and should include guardrails and infill panels on its outside perimeter. The platform should not be used for any purpose that may lead to additional hazards – eg trips and slips, falls onto materials.

5.2.5 Roofs with pitch greater than 45°

Where the pitch of the roof exceeds 45°, a risk assessment should be undertaken to determine the additional safeguards required. Consider wider platforms, higher guardrails, mesh infill panels, fall arrest systems, perimeter scaffolding (see figure 3), or use boom-type elevating work platforms (or cherry pickers).

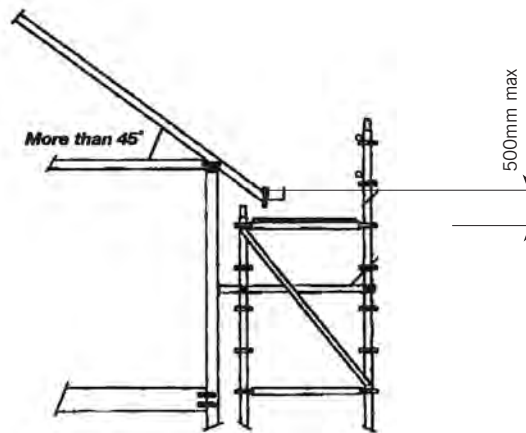


Figure 3: Scaffolding as edge protection for roofs greater than 45° pitch (end guardrail omitted for clarity).

5.3 Protection from falling through the roof

Those working away from the roof's edge must also be safeguarded against the risks of falling through a partially complete or fragile roof, or through openings in the roof.

5.3.1 Safety mesh

Safety mesh is often installed between the roof structure and the cladding, irrespective of the spacing of the purlins or rafters. It is used to protect those who install cladding at the leading edge of the roof and to protect those who undertake maintenance work on the roof.

Safety mesh is generally not designed and constructed to serve as a working platform and should not be walked upon unless it is designed for that purpose.

Safe work method statement

If safety mesh is used ensure that it:

- is strong enough to withstand an impact of a person falling
- installed properly so that it retains its strength
- should conform to AS/NZS 4389 *Safety mesh* – ie comprises two mm diameter wire of at least 450 mega Pascals tensile strength, welded into a mesh with longitudinal wire spacing of 150 mm and cross wire spacing of 300 mm
- is appropriate for the roof – ie truss (lateral) and purlin (longitudinal) layout, pitch and span length
- is installed safely and in accordance with the manufacturer's instructions (have this verified in writing by a competent person) – this record should be kept, together with details of the mesh and an outline of the installation process.

All those involved in the installation of safety mesh must be properly trained, and competent to perform the task and provided with appropriate supervision to ensure they work safely.

The contractor should obtain documented verification from a competent person that the mesh has been properly installed.

Obligations related to information

There are a number of parties that hold obligations in relation to safety mesh and they include:

- a. designers – should provide information on handling, storage, how to select for the intended purpose, how to use and limitations
- b. manufacturers and suppliers – should ensure the mesh complies with AS/NZS 4389 and should ensure that all relevant information is included with the mesh (eg lapping adjoining lengths of mesh, minimum lap lengths, maximum span and the like) to confirm it is adequate for its intended purpose and to enable its correct installation
- c. contractors – must ensure that all relevant information has been made available to workers.

Case study: installing safety mesh

- Check the mesh against the specifications outlined in AS/NZS 4389.
- Ensure the longitudinal wires are parallel to the sheeting corrugations and in contact with the top of the immediate sheeting supports.
- Ensure the transverse wires (cross wires) are at right angles to the direction of the corrugations – transverse wires should be on top of the longitudinal wires.

Set-up

- Cut a length of mesh from the roll and run out over the roof using a continuous mechanical or manual rope system
- Work safely from a scaffold or an elevating work platform , positioned at each side of the roof
- See figure 4.

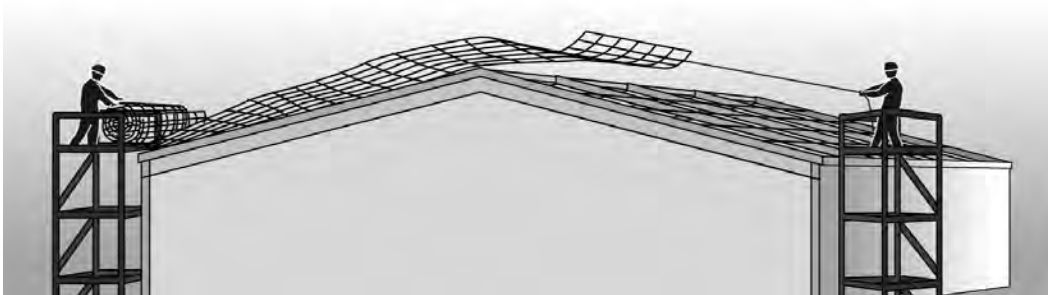


Figure 4: Installing mesh

Fixing to purlins

- Fix the mesh to metal purlins by passing each longitudinal wire through a hole drilled in the top of the purlin – see figure 5 – if practicable, drill holes on the purlins before installing them on the structure
- Tie off all longitudinal wires at least four full turns around the same wire – see figure 5
- If fixing to timber purlins ensure they are firmly fixed using 40 mm x 3.5 mm or larger staples or wrapping around as shown in figure 5
- Work safely from a scaffold or elevating work platform – see figure 4.

Side laps

- Side-lap runs of mesh by at least 150 mm (one opening width).
- If the purlin spacing exceeds 1.7 metres, side-lap runs of mesh by at least 300 mm, fixed by two mm staples at regular intervals (not exceeding manufacturer's instructions).
- Staple lap joints from underneath.

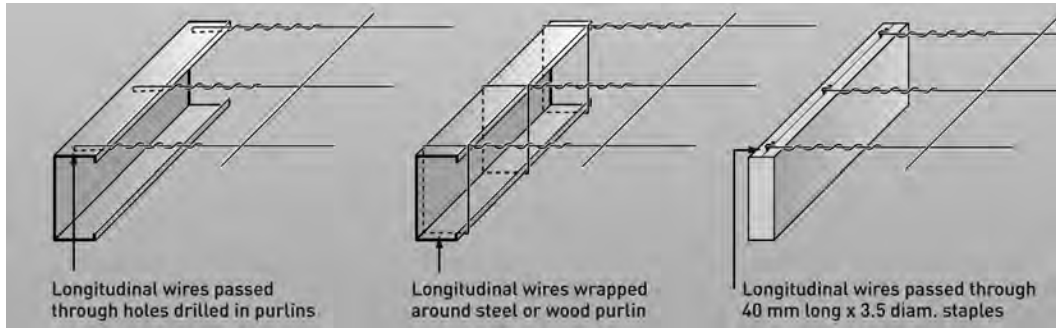


Figure 5

End joints

- Order the mesh in long lengths so that longitudinal joints can be avoided.
- For longitudinal joints, the knot and tie using the full length of the tail wire – ie 300 mm long.
- To get a 300 mm tail wire, the longitudinal wire should be cut close to the joint.
- Tie the first tail wire at least three times around the knot.
- Place the other tail wire under the longitudinal wire and tie around the transverse wire at least three times.
- The joint should be the full width of the mesh, and every longitudinal wire should be joined.

Alternatively, instead of joining two ends of the mesh, secure the ends of the two parts of mesh to the purlins.

See figure 6

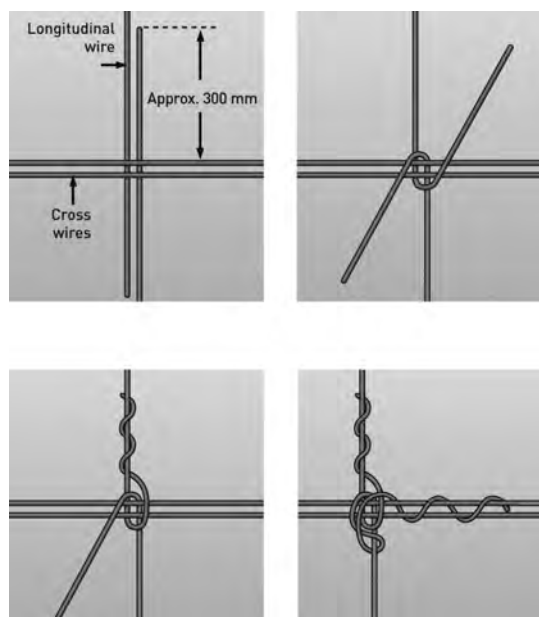


Figure 6

5.4 Fall arrest systems

A fall arrest system is designed to arrest a person's fall and minimise injuries. It provides a lesser level of risk control than preventing the fall in the first place. A fall arrest system should only be used when it is not practicable to control the risk with a higher-level control measure, such as scaffolding or edge protection. Often, a fall arrest system should be used in conjunction with higher-level control measures to minimise the risk of, for example, falling through the roof.

The user of a fall arrest system should be competent in its set-up and use, and should inspect it for wear and damage after use, storage and transport. They should ensure that it is effective, and creates no new hazards, such as trip hazards, or restricts movement to the extent that the task cannot be performed safely.

5.4.1 Recovery and rescue

Adequate provision should be made for the rescue of someone who falls while using a fall arrest system. Suspension trauma is likely to result if suspended too long in a harness see 5.4.8.

Components of an industrial fall arrest system should be used in accordance with the manufacturer's instructions and should conform to the relevant parts of AS/NZS 1891. Parts 1 to 3 of this standard provide design, testing and marking requirements, and Part 4 provides information on selection, use and maintenance. Employers should request confirmation from the supplier that the equipment complies with the relevant parts of the standard and ensure that the manufacturer's instructions are provided. It should be noted that the manufacturer's instructions are not a substitute for training and instruction.

5.4.2 Anchor points

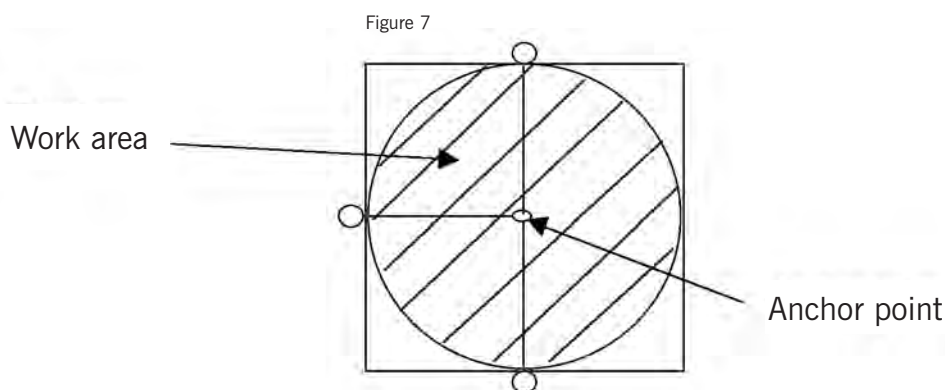
Anchor points, and the connections and structures to which they are connected, should be designed and selected to resist maximum likely force. AS/NZS 1891.4 *Industrial fall arrest systems Part 4 – Selection, use and maintenance* specifies that the ultimate capacity of a single fall arrest anchor point for one person is 15kN (or approximately 1500 kg) – equivalent to the weight of a family sedan. AS/NZS1891.4 specifies capacity requirements for other situations and for proprietary static lines (ie horizontal lifelines).

It should be noted that roof trusses can only be used as an anchorage point if they are capable of supporting anchors.

The various components of a fall arrest system and the harnesses must be compatible. There should be compatibility, too, between the anchor points and the host structure. And connections should fit together so as to avoid excessive wear, jamming, failure of the locking mechanism or loading of the locking gate (this is especially relevant when components are bought from different suppliers).

5.4.3 Configuration

- a. Where practicable, a fall arrest system should be used as a restraint system to prevent a worker moving from safe to unsafe areas on the roof. Figure 7 indicates a single anchor and fixed-length lanyard used in restraint mode, which prevents the user falling off the edge, allowing them to reach only the edge at the four isolated points
- b. If the work is to be performed at the edge of the roof, the fall arrest system should be configured so as to reduce the potential fall distance (generally, the greater the fall, the greater the potential for injury). A fall arrest system with a harness must be configured so that it begins to arrest the fall before the worker has fallen more than two metres
- c. Although the fall arrest must begin within two metres, the worker continues to fall, so there must be sufficient clearance to arrest the fall before the worker hits the ground. AS/NZS 1891.4 *Industrial fall arrest systems Part 4 – Selection, use and maintenance* provides guidance on calculating the appropriate clearance distances
- d. If a line-and-rope grab-fall arrester device is used, it is manually operated from the front. A harness with a front-fall arrest connection point should be considered
- e. There should be minimum slack in the lanyard or safety line between the person and anchorage attachment
- f. Energy absorbers should be used as part of the lanyard assembly to reduce shocks to the body and anchorage point, unless the system configuration ensures the load will not exceed 6kN (approximately 600 kg)
- g. The use of lanyards and inertia reels together should be avoided, as it could reduce the effectiveness of the inertia reel. If the lanyard is to be attached to the rear harness connection point, it should be no more than 450 mm long
- h. The fall arrest system should be selected by a competent person and all users should be adequately trained in its safe use
- i. Those using a fall arrest system or restraint must be attached to the system or restraint at all times. If transferring from one anchorage to another, a second lanyard attached to the harness should be used. Connect the second lanyard to the next anchorage before disconnecting the first
- j. Snap-hooks should not be connected to each other
- k. For multiple users, the system should be configured and used to avoid crossed or tangled lanyards and lines.



5.4.4 Inertia reel systems

- a. Inertia reels are not designed for continuous support but become effective in the event of a fall. They should not be used as working supports by locking the system and allowing it to support the user during normal work. For some applications, such as stopping someone sliding down the inclined surface of a pitched roof, inertia reels may be less effective and the manufacturers should be consulted in selecting the inertia reels
- b. Most inertia reels are designed to operate with the extended line close to vertical – ie anchored almost directly above the user
- c. Where the manufacturer permits the use of the inertia reel in a horizontal position, the configuration should not allow for the webbing or rope line from the inertia reel to travel over sharp edges in the event of a fall.

Figure 8

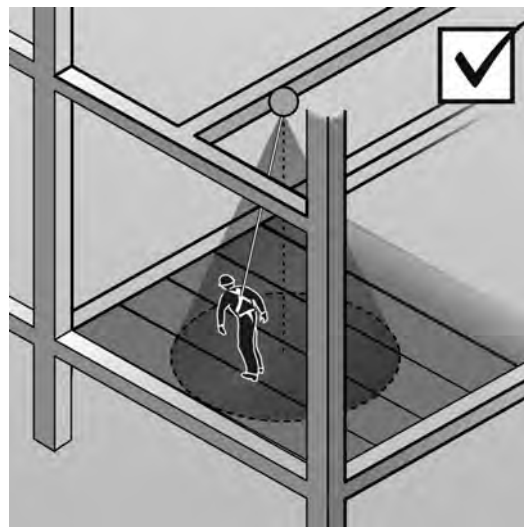
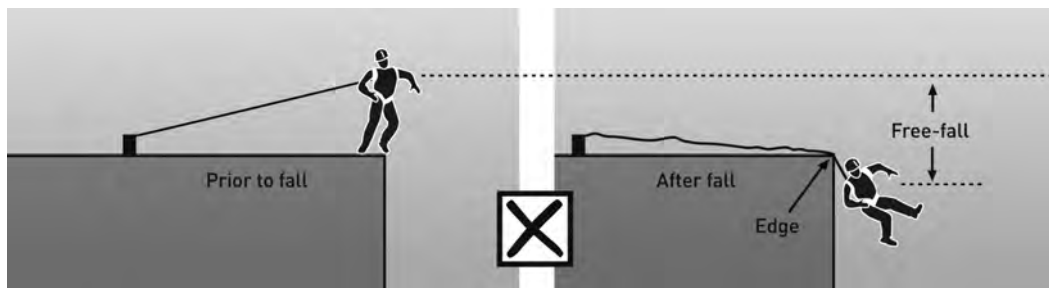


Figure 9

5.4.5 Monitoring those using a fall arrest system

Those using a fall arrest system should not work alone. If it is necessary to work alone, constant monitoring should be undertaken to ensure the worker is working safely.

5.4.6 Horizontal lifelines

- Horizontal lifelines (known as static lines or safety lines) should conform to AS/NZS 1891.2 *Industrial fall arrest systems and devices Part 2 – Horizontal lifeline and rail systems*
- The installation of horizontal lifelines should be carried out by a person holding a certificate of competency as a rigger or scaffolder, in accordance with the manufacturer's or designer's specifications
- The horizontal lifeline should be located as high as practicable above those connected to it. Working above the lifeline will allow someone to fall more than two metres before fall arrest commences.

5.4.7 Pendulum effect

The 'pendulum effect' is a potential hazard when using a fall arrest system, especially when using an inertia reel, long lanyard or anchorage line with a rope-grab fall arrester. The pendulum effect can occur both for falls off the roof and through the roof, if the inertia reel allows for too much unsupported line to be connected to the user. The two types of pendulum effect are swing down and swing back.

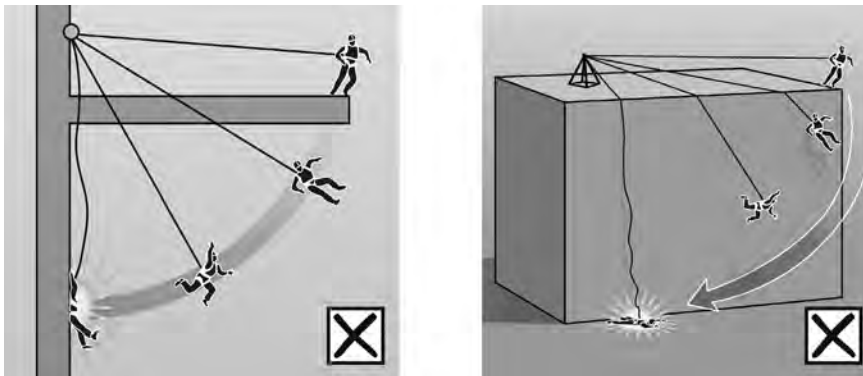


Figure 10

Swing down

Swing down can occur if an inertia reel, lanyard or anchorage line is extended so that the line is not approximately perpendicular to the roof's edge. See figure 10. In this situation, the forces generated in an arrested fall over the edge will cause the line to rotate or slide back along the roof perimeter, until it reaches a position in line with the anchorage point and at right angles to the roof's edge.

As the line moves back, the section overhanging the roof lengthens, dropping the worker further than the original (arrested) fall distance. If the length of the unsupported line is equal to the height of the building, the worker will hit the ground. Even if the worker can't hit the ground, the pendulum increases the fall distance and enhances the likelihood of hitting another object – and increases the potential for the line to be damaged as it rotates and slides along the edge of the roof.

To eliminate the swing down effect:

- use a secondary anchorage point and lanyard (or line)
- place the anchorage point approximately perpendicular to the roof's edge at the work location – a mobile anchorage on a horizontal lifeline or rail system achieves this for a wider range of work locations.

Swing back

Swing back can occur when a worker is anchored to a point on the other side of the void into which they fall, and therefore swing back into the building. This effectively increases the fall distance and can lead to hitting the building. Use anchorage configurations to avoid these situations.

5.4.8 Suspension trauma

When a person is suspended motionless in a harness, blood begins to pool in the limbs – and suspension trauma takes place. It is like standing to attention for a long period of time – fainting may result. If someone faints while suspended in a harness, their condition will deteriorate, and death may result. Depending on the circumstances, and the condition of the person at the time of the incident, trauma can arise within minutes.

An emergency rescue plan must be developed to account for this risk

Suspension trauma is unrelated to one's fitness level. To avoid suspension trauma, the worker should be instructed to move into a horizontal position, elevate the knees and pump the legs by pushing against a solid object (eg the wall) at regular intervals. If suspended from the harness's rear fall arrest connection and unable to swing horizontally, pump the legs regularly (ideally against a solid object).

6. BRITTLE OR FRAGILE ROOFS AND ROOF OPENINGS

Before carrying out any work on roofs, a risk assessment should be carried out to identify safe access and whether there are any brittle or fragile roofs, skylights and roof openings within the work area. Hazardous areas should be clearly marked as 'no go' zones during set up. Persons working on-site should be informed of the existence of such areas and how to identify them in case any were overlooked – eg by inclusion in the site induction, in toolbox talks, and in the SWMS.

Where openings have been identified, measures must be taken to prevent persons walking on them – eg by barricading or using a restraint system. When workers need to be near these features and it is impracticable to physically prevent access to them, a fall arrest system incorporating a safety harness and effective anchorage point should be used.

If a roof, or part of a roof, is fragile or brittle, clause 39(b) of the OHS Regulation requires the owner or controller of the building to provide warning signs that contain the words DANGER – BRITTLE ROOF, and that are affixed to each individual slope, curve or section of the roof, and to all other places from which access to the roof may be obtained. It also requires that walkways be provided and maintained.

Clause 60 of the OHS regulation also requires the employer or self-employed person to provide permanent walkways, or if this is not practicable, adequately secured temporary walkways or other means to prevent falls, such as:

- a. scaffolding and fall arrest systems, including anchorages for everyone working on the roof, and
- b. temporary roof ladders for anyone working on a sloped part of the roof .

A fall arrest system should be used when removing any fragile or brittle cladding. See chapter 7 if the roof is fragile or brittle and contains asbestos.

7. ASBESTOS CEMENT ROOFS

Asbestos is a hazardous substance made from naturally occurring fibrous silicate minerals found in some rock formations.

The disturbance of asbestos products may cause fine asbestos fibres to become airborne, which may present a health risk. When airborne, the fibres can be inhaled and can penetrate the deepest part of the lungs, causing lung cancer, mesothelioma or asbestosis.

Many buildings built before 1986 contain asbestos. The most common areas where asbestos is found include flat (fibro), lagging and pipe insulation, insulation wool, corrugated or compressed asbestos-cement (A-C) sheeting, guttering and down pipes.

7.1 Identifying materials containing asbestos

It is a legal requirement to identify all materials within a workplace that contain asbestos. These materials must be recorded in an asbestos register, which forms part of an overall asbestos management plan. Prior to commencing any work on roofs, the asbestos register should be reviewed as part of the risk assessment process.

However, it is not satisfactory to rely solely on the asbestos register when conducting a risk assessment. A visual inspection of the work area and the identification of all hazards should be conducted as part of the risk assessment process. If it is suspected that some materials contain asbestos, they should be tested to confirm whether or not asbestos is present.

7.2 Performing asbestos work

Asbestos work means work where exposure to asbestos may occur. It includes any work that involves repairing, removing or disturbing asbestos or material containing asbestos – eg repair work on an asbestos roof.

All asbestos work must have a documented risk assessment. The risk assessment and the work performed must be conducted in accordance with the following codes of practice:

- a. *Code of practice for the management and control of asbestos in workplaces* [NOHSC:2018 (2005)]
- b. *Code of practice for the safe removal of asbestos, 2nd edition* [NOHSC: 2002 (2005)].

These codes are referred to in the amended OHS Regulation.

The *Code of practice for the management and control of asbestos in workplaces* sets out the steps to be taken to eliminate, or otherwise minimise, the risks of exposure to airborne asbestos fibres, including the identification of materials containing asbestos, risk assessments and the implementation of control measures.

The *Code of practice for the safe removal of asbestos* sets out the requirements for the safe removal from workplaces of all materials containing asbestos.

These documents can be found on the Australian Safety and Compensation Council (ASCC) website, www.ascc.gov.au

7.3 Asbestos licensing system

Without a licence from WorkCover, it is illegal to work with bonded asbestos that is above certain threshold limits. The threshold limits are outlined on www.workcover.nsw.gov.au

Working with bonded materials containing asbestos above the legislated threshold limits is deemed to be a high-risk activity – and high-risk activities require a person to be licensed to conduct those activities. WorkCover’s licensing system is implemented to protect asbestos removal workers, building occupants and the public by ensuring that contractors have the appropriate skills, training and experience in asbestos removal work to prevent occupational and environmental contamination.

Where bonded asbestos work above the threshold limits is undertaken, WorkCover must be notified. This notification system allows WorkCover to monitor asbestos removal projects on a job-by-job basis, ensuring compliance with legislation and nationally-agreed work methods.

There are two types of licences for asbestos work:

- a. bonded asbestos licence
- b. friable asbestos licence.

Bonded asbestos is any asbestos containing material in a bonded matrix. It may consist of Portland cement or various resins or binders, and it cannot be crushed by hand when dry. If fire, hail or illegal water-blasting damages bonded asbestos, or the material is showing signs of wear from water and age, it may become friable asbestos material.

Friable asbestos is any asbestos containing material in a powder form, or material that can be crushed by hand when dry. The removal of friable asbestos must only be undertaken by a WorkCover-licensed friable asbestos removalist . They must also obtain a site-specific permit from WorkCover to carry out this type of work.

A person licensed for friable asbestos removal work does not need an additional licence for bonded asbestos removal work.

Further information about obtaining a licence for asbestos work can be found on www.workcover.nsw.gov.au

8. MANUAL HANDLING

Manual handling includes any activity that involves lifting, lowering, pushing, pulling, carrying or moving, holding or restraining. It also includes sustained and awkward postures, and repetitive motions.

The OHS Regulation requires employers to design all objects, work practices and work environments so that manual handling risks are eliminated or controlled, as far as reasonably practicable.

An employer must assess the risks involved in carrying out manual handling tasks and then implement appropriate control measures. This must be done in consultation with those workers who are required to carry out the manual handling tasks, and the risks and the control measures should be included in the safe work method statement.

Risk assessment for manual handling tasks must take into consideration the following factors (if relevant):

- a. actions and movements, including repetitive actions and movements
- b. workplace and workstation layout
- c. working posture and position
- d. duration and frequency of manual handling

- e. location of loads and distances moved
- f. weights and forces
- g. characteristics of loads and equipment
- h. work organisation
- i. work environment
- j. skills and experience
- k. age
- l. clothing
- m. special needs (temporary or permanent)
- n. any other factors considered relevant by the employer, the workers or their representatives on health and safety issues.

Where the nature of manual handling tasks is constantly changing, the risk assessment and control process, and training, should be conducted on an ongoing basis. Guidance on identifying, assessing and controlling manual handling risks can be found in the *National code of practice for the prevention of musculoskeletal disorders from performing manual tasks at work* (August 2007).

If it is not reasonably practicable to eliminate the risk arising from manual handling, an employer must design the work activity to control the risk and, if necessary, they must:

- a. modify the design of the objects to be handled or the work environment (to the extent that it is under the employer's control), taking into account work design and work practices
- b. provide mechanical aids or make arrangements for team lifting, or both – as far as reasonably practicable, an employer must achieve risk control by means other than team lifting
- c. ensure that the persons carrying out the activity are trained in manual handling techniques, correct use of mechanical aids and team lifting procedures appropriate to the activity.

Examples of possible controls include:

- a. using pallets and bulk-handling systems
- b. purchasing materials in lighter containers
- c. minimising double-handling by better placement of materials
- d. using waist-height storage areas
- e. using work platforms that minimise extensive reaching
- f. introducing modifications that reduce lifting, twisting, slips and trips
- g. rotating tasks to avoid prolonged repetition of manual handling tasks.

8.1 Mechanical lifting equipment

Where appropriate, mechanical lifting equipment – eg cranes, elevating work platforms, tile elevators and builders' hoists – should be provided in order to minimise the risk of manual handling injuries.

If tile elevators or builders' hoists are used, consider the risk of:

- a. manual handling injuries during installation and removal of cladding
- b. injuries from unguarded drive mechanisms or nip points on elevator belts
- c. injuries from falling objects or from moving machine parts – barricades to prevent access should be used.

Ideally, when using, installing or removing mechanical lifting equipment, the effectiveness of any roof-edge protection should be maintained – or, if removed, it should be replaced as soon as the equipment is installed or no longer required.

An appropriate certificate of competency is often required by anyone operating plant, such as builders' hoists and elevated work platforms.

9. FALLING OBJECTS

Clause 57 of the OHS Regulation requires employers to ensure that risks associated with falling objects are controlled by the use of:

- a. a safe means of raising and lowering plant, materials and debris in the workplace
- b. a secure physical barrier to prevent objects falling freely from buildings or structures in, or in the vicinity of, the workplace
- c. measures to arrest the fall of objects, if it is not possible to provide a secure physical barrier
- d. appropriate PPE
- e. 'no go' zones to isolate the danger area.

Measures to prevent falling objects should be implemented when:

- a. apertures in the safety mesh allow material to fall through
- b. there is a gap between the top of the roof cladding and the bottom of a toe-board or infill panel – eg to slide roof cladding onto the roof
- c. working from elevated structures, such as working platforms, formwork, ladders, scaffolding.

Controls that can reduce the risk of objects falling from heights include:

- a. modifying design – eg toe-boards, chutes, splash plates
- b. prohibiting work above other workers
- c. installing screens, overhead protection, protected walkways
- d. isolating danger areas as 'no –go' zones
- e. housekeeping floors and access ways, cleaning spillage, using lanyards or tools
- f. providing appropriate training.

10. ELECTRICAL SAFETY

10.1 Work in close proximity to overhead powerlines

The OHS Regulation outlines specific safety measures that must be complied with when carrying out work in close proximity to overhead powerlines, including a written risk assessment and a safe system of work.

All work near overhead powerlines should conform to the recommendations and guidance provided in the *Code of practice for work near overhead powerlines*.

Overhead powerlines located near the worksite are a potential hazard to those working on roofs. Where powerlines are in close proximity, the following approach distances should be observed:

- a. four metres where any conductive metal material or scaffolding is being handled
- b. 1.5 metres where only non-conductive material, such as dry timber battens, is being handled.

10.2 Hazard identification

Before undertaking any work, where the work might come closer than the above approach distances, an inspection must be carried out at the worksite and reasonable care taken to identify any potential hazards.

Hazards may include:

- a. live overhead powerlines, including low voltage overhead service lines and aerial consumers' mains
- b. deteriorated or broken insulation on the conductors or electrical apparatus
- c. scaffolding coming into contact with overhead powerlines
- d. possibility of hand-held tools, equipment or roofing materials coming into contact with overhead powerlines.

10.3 Risk assessment

If a hazard involving overhead powerlines has been identified, a written risk assessment must be undertaken by the employer to determine the risk to those encroaching within the above approach distances. This will help determine the level of risk associated with the identified hazards and establish a priority list based on the level of risk.

The following factors may be included in the risk assessment:

- a. the type of work activities being undertaken, and the tools, equipment, scaffolding and roofing materials being used
- b. proximity of the work activity or scaffolding to the overhead powerlines
- c. environmental conditions, such as wind, which may be bring a risk of unexpected movement of the roofing material, tools, equipment or scaffolding.

10.4 Eliminating or controlling risks

Once the hazards associated with working on roofs near overhead powerlines have been identified and assessed, control measures must be implemented to eliminate the risk. If it is not practicable to do so, the risks must be controlled.

The use of specific control measures to eliminate or control identified risks should be done on the basis of the risk assessment. In particular, consider:

1. eliminating the hazard – this could involve de-energising the overhead powerlines during the work; following consultation and agreement with the electricity network operator; consideration may also be given to re-routing the overhead powerlines from the roofing work, or replacing existing overhead powerlines with underground cables.
2. separating the hazard – this could involve erecting a physical barrier on the roof to prevent someone (or something) encroaching within the above approach distances.
3. minimising the risk by engineering means – this could involve substituting the scaffold with another means of access and egress, such as an elevated work platform.
4. introducing administrative controls – this could involve planning and, where relevant, documenting the SWMS before starting work, or using a safety observer to warn people before they encroach within the above approach distances (or making the hazard visible by arranging for the electricity network operator to effectively identify exposed live low voltage conductors (up to an including 1000 volts a.c.) by using approved visual indicators, such as ‘tiger tails’ (tiger tails should not be regarded as providing protection from electrical hazards).
5. using appropriate PPE.

If no single measure is sufficient, a combination of the above control measures is required so as to minimise the risk to the lowest level reasonably practicable.

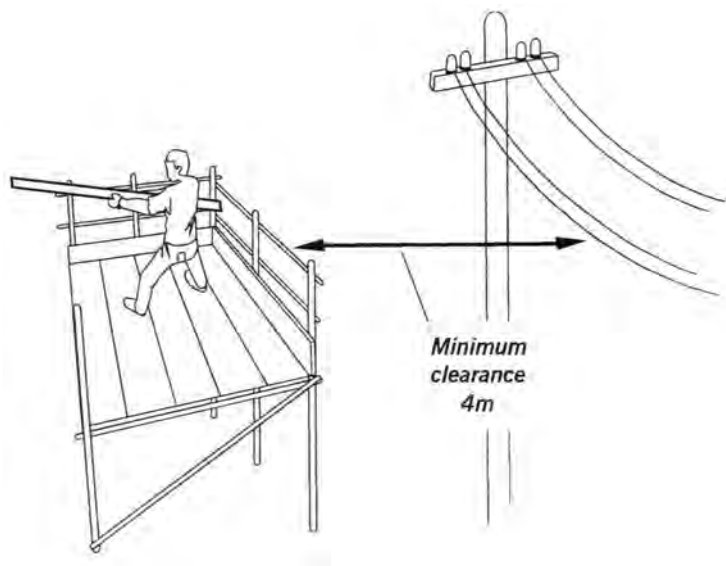


Figure 11: A four-metre distance applies in any direction where metallic scaffold is erected, used or dismantled near overhead powerlines (end protection omitted for clarity) Consideration must also be given to the sag and swing of the conductors.

10.5 Electrical practices for roofing work

Employers should ensure that temporary construction wiring, switchboards and portable electrical equipment used in roofing work complies with the *Code of practice for electrical practices for construction work*. This code outlines specific safety measures that should be followed when carrying out construction work, including:

- a. ensuring that temporary construction site switchboards are of a robust design, mounted securely and constructed from materials able to withstand mechanical damage
- b. protecting all temporary construction wiring and portable electrical equipment by 30mA residual current devices (RCDs)
- c. ensuring extension leads – where linked together, used outdoors or on metal roofs – are protected by design or enclosure against separation of the plug and socket, or the ingress of water
- d. ensuring portable electrical equipment, extension leads and portable power tools are maintained in good condition and regularly inspected, tested and tagged.

For further information, see the *Code of practice for electrical practices for construction work*.

11. PERSONAL PROTECTIVE EQUIPMENT

Clause 15 of the OHS Regulation requires PPE to be provided to workers.

The employer (or self-employed person) must provide each person at risk with PPE and ensure that:

- (a) the equipment provided is appropriate for the person and controls the risk for that person
- (b) the person is informed of any limitations of the equipment
- (c) the person is provided with the instruction and training necessary to ensure that the equipment controls the risk for the person
- (d) the equipment is properly maintained, and is repaired or replaced as frequently as is necessary, to control the risk for the person
- (e) the equipment is provided in a clean and hygienic condition to the person
- (f) the equipment is stored in a place provided by the employer for that purpose
- (g) areas in places of work where PPE must be used are clearly identified.

11.1 Provision of PPE

The use of PPE to control risks is lowest on the hierarchy of control measures – see 3.2.2. The measures at the lower levels are less effective and require more frequent reviews of the hazards and systems of work. They should only be used when other control measures are impracticable, or where a residual risk exists after implementing other controls.

11.1.1 PPE selection and suitability

Where PPE is to be used, it should be appropriate for the risk and should conform to the relevant Australian Standard. PPE should be selected by a competent person and inspected and maintained according to the manufacturer's recommendations. There should be sufficient supervision and monitoring conducted to ensure PPE is used and that workers are competent in its use.

PPE that is suitable for roof work includes:

- a. fall arrest equipment – fall arrest harnesses, lanyard assemblies and associated equipment should be comfortable, protect the wearer, allow freedom of movement, and permit access to all areas where work is required
- b. footwear – rubber-soled shoes with herringbone, non-slip tread are recommended for work on roofs; footwear should have good grip, be flexible, and allow the wearer to ‘feel’ the roof
- c. eye protection – dust, flying objects and sunlight are the most common sources of eye damage in construction work (When someone is carrying out welding, or cutting, grinding or chipping of concrete or metal, they should be provided with eye protection that conforms to AS/NZS 1337 *Eye protectors for industrial applications*. Eye protection should also be provided when carrying out other work, such as carpentry or handling chemicals, where there is a risk of eye injury. Selection, use and management systems should conform to AS/NZS 1336 *Recommended practices for occupational eye protection*)
- d. protection from sun – use a sunscreen with an SPF (sun protection factor) rating of at least 30+, wear a hat, long-sleeve shirt and trousers; ensure exposed parts of the body are adequately covered with sunscreen, supervise and monitor workers so they are not exposed to extensive periods of sunlight, or reflections from glazed tiles and metal roofing materials, and implement administrative control measures, such as starting and finishing work early.

11.2 Clothing

Clothing should be comfortable, suitable for the work, and appropriate for the weather conditions. Avoid loose clothing that may snag or create a trip hazard.

12. DEFINITIONS

Definitions are usually taken from the OHS Act, the OHS Regulation, or from other relevant legislation, codes of practice or Australian Standards. Where developed specifically for this code of practice, it is indicated in a note. For legal obligations, a person should always refer to the relevant legislation.

anchorage point – a secure point of attachment on a structure to which a fall arrest device or anchorage line may be secured or a secure point on a fall arrest device to which a lanyard may be secured

anchorage line – a line that extends from a fixed anchor to which a person attaches their fall arrest equipment.

commercial and industrial buildings – all buildings except residential buildings (see 'residential buildings').

competent person – for any task, a person who has acquired through training, qualification or experience, or a combination of these, the knowledge and skills to carry out that task.

construction work –

- a. excavation, including the excavation or filling of trenches, ditches, shafts, wells, tunnels and pier holes, and the use of caissons and cofferdams
- b. building, including the construction – and the manufacturing of prefabricated elements of a building at the place of work concerned – alteration, renovation, repair, maintenance and demolition of all types of buildings
- c. civil engineering, including the construction, structural alteration, repair, maintenance and demolition of airports, docks, harbours, inland waterways, dams, river and avalanche and sea defence works, roads and highways, railways, bridges and tunnels, viaducts, and works related to the provision of services such as communications, drainage, sewerage, water and energy supplies.

contractor – the person or entity responsible for the installation, maintenance, repair or removal of the roof coverings and any other operation involving the movement of those working on roofs on commercial and industrial buildings (depending on the contractual arrangements that are in place, the contractor doing the work may be an employer, self-employed person or the principal contractor).

controller of premises – a person who has control of premises that are used by people as a place of work, including a person who has only limited control of the premises and a person who has, under any contract or lease, an obligation to maintain or repair the premises (in which case any duty imposed on a controller under the OHS Act or OHS Regulation applies only to the matters over which the person has control).

employee – a worker, an individual who works under a contract of employment or apprenticeship.

employer – a person who employs people under contracts of employment or apprenticeship, and may include a self-employed person. In some parts of the OHS Regulation the term 'employer' also refers to a self-employed person in terms of their duties to other persons.

energy absorber – a component, whether separate or incorporated into another item, designed to be used in connection with fall arrest equipment that reduces the shock to the body and anchorage point by absorbing some of the fall energy.

fall arrest device – a self-locking device with the function of arresting a fall. It can be either:

- a. type 1 – a fall arrest device that travels along an anchorage line and, when loaded, locks to the line
- b. type 2 – a fall arrest device from which a spring-loaded anchorage line pays out, and which locks when loaded.

fall arrest harness – also known as a ‘safety harness’, an assembly of interconnected shoulder and leg straps designed for attachment to a lanyard or fall arrest device.

fall arrest system – a system consisting of a fall arrest harness and other components connecting the harness to an anchor point to minimise the distance and severity of a fall.

fall restraint – a system that incorporates a safety line secured to an anchorage that prevents a person from reaching the edge of the roof or a defined opening within it.

guardrail system – a structural roof edge protection system that may comprise posts, rails, infill panel or toe-boards, or a combination of these, that is designed to prevent persons falling from the edge of a roof.

high risk construction work –

- a. construction work involving structural alterations that require temporary support
- b. construction work at a height above three metres
- c. construction work involving excavation to a depth greater than 1.5 metres
- d. demolition work for which a licence is not required under chapter 10 of the OHS Regulation to carry on the business of that work
- e. construction work in tunnels
- f. construction work involving the use of explosives
- g. construction work near traffic or mobile plant
- h. construction work in or around gas or electrical installations, and
- i. construction work over, or adjacent to, water, where there is a risk of drowning.

inertia reel – a type 2 fall arrest device.

infill panel – a panel, typically fabricated from steel wire mesh, connected to the top rail of an edge protection system used in place of a mid-rail and bottom rail, or toe-board. It can be a structural panel, which does not require backing rails, or a non-structural panel, which does require backing rails.

lanyard – a flexible line, rope or strap, usually as part of a lanyard assembly, used to connect a fall arrest harness to an anchorage point or static line.

lanyard assembly – the combination of a lanyard and a personal energy absorber.

must – indicates that the requirements are mandatory under occupational health and safety legislation.

person – an individual, a corporation or a body corporate or politic.

place of work – premises where people work.

premises –

- a. any land, building or part of any building
- b. any vehicle, vessel or aircraft
- c. any installation on land, on the bed of any waters or floating on any waters
- d. tent or moveable structure.

principal contractor – in relation to construction work – or a construction project involving construction work – a person who is, under clause 210 of the OHS Regulation, for the time being, appointed, or taken to be, the principal contractor for the construction work. Where construction work is being undertaken and the owner has not appointed a principal contractor, the owner is taken to be the principal contractor for the construction work. Principal contractors have special duties under the OHS Regulation. The principal contractor is usually the main contractor – ie the contractor undertaking the construction works.

OHS Act – the *Occupational Health and Safety Act 2000*.

OHS Regulation – the *Occupational Health and Safety Regulation 2001*.

owner – a person who is the owner of a place of work and who is required by clause 210 of the OHS Regulation to appoint a principal contractor. For the purposes of clause 210, owner has the same meaning as in the *Local Government Act 1993* – ie

- a. in relation to Crown land, means the Crown and includes:
 - i. a lessee of land from the Crown, and
 - ii. a person to whom the Crown has lawfully contracted to sell the land but in respect of which the purchase price or other consideration for the sale has not been received by the Crown, and
- b. in relation to land other than Crown land, includes:
 - i. every person who jointly or severally, whether at law or in equity, is entitled to the land for any estate of freehold in possession, and
 - ii. every such person who is entitled to receive, or is in receipt of, or if the land were let to a tenant would be entitled to receive, the rents and profits of the land, whether as beneficial owner, trustee, mortgagee in possession, or otherwise, and
 - iii. in the case of land that is the subject of a strata scheme under the *Strata Schemes (Freehold Development) Act 1973* or the *Strata Schemes (Leasehold Development) Act 1986*, the owners corporation for that scheme constituted under the *Strata Schemes Management Act 1996*, and
 - iv. in the case of land that is a community, precinct or neighbourhood parcel within the meaning of the *Community Land Development Act 1989*, the association for the parcel, and
 - v. every person who by this Act is taken to be the owner, and
- c. in relation to land subject to a mining lease under the *Mining Act 1992*, includes the holder of the lease, and
- d. in Part 2 of chapter 7, in relation to a building, means the owner of the building or the owner of the land on which the building is erected.

residential building –

- a. single dwelling house – a dwelling used, or adapted for use, solely for habitation by no more than one family, including a dwelling in a row of two or more dwellings attached to each other (but not a flat) that is commonly known as a semi-detached or terrace building
- b. residential flat building – a building containing two or more dwellings.

rope-grab fall arrester – reduces the potential free fall distance and may absorb much of the energy of a fall while allowing mobility along the line. The rope grab fall arrester can be manually moved along the line or locked in place, or it can be an automatic device.

safety mesh – a membrane installed between the roof structure and its cladding to safeguard those installing the cladding, or otherwise working on the roof.

safe work method statement – SWMS, a statement that:

- a. describes how work is to be carried out
- b. identifies the work activities assessed as having safety risks
- c. identifies the safety risks
- d. describes the control measures that will be applied to the work activities.

The statement also includes a description of the equipment used in the work, the standards or codes to be complied with, the qualifications of the personnel doing the work and the training required to do the work.

scaffold – a temporary structure specifically erected to support access or working platforms.

self-employed person – a person who works for gain or reward otherwise than under a contract of employment or apprenticeship, whether or not they employ others. In some parts of the OHS Regulation, ‘employer’ also refers to a self-employed person in terms of their duties to other persons.

should – indicates a recommendation to do something that is not a mandatory requirement under occupational health and safety legislation.

site safety plan – the site specific occupational health and safety management plan referred to in clause 226 of the OHS Regulation.

static line – also known as ‘horizontal lifeline’, a substantially horizontal line in tension attached to two or more anchorage points to which a lanyard may be attached, and designed to arrest a fall.

work – work as an employee or self-employed person.

worker – any individual person who does work. See ‘employee’ and ‘self-employed person’.

13. FURTHER INFORMATION

13.1 WorkCover NSW publications

- *Code of practice for OHS consultation*
- *Code of practice for electrical practices for construction work*
- *Code of practice for occupational health and safety induction training for construction*
- *Code of practice for work near overhead powerlines*
- *Code of practice for risk assessment*
- *Portable ladders*
- *Working with Asbestos*
- *Working off stepladders*
- *Skin cancer and outdoor workers – a guide for workers*
- *Skin cancer and outdoor workers – a guide for employers.*

13.2 ASCC publications

- *Code of practice for the safe removal of asbestos*
- *Guide to the control of asbestos hazards in buildings and structures*
- *Guidance note on the membrane filter method for estimating airborne asbestos dust*
- † *The NOHSC Guide to the control of asbestos hazards in buildings and structures*
- † *NOHSC Code of practice for the safe removal of asbestos*
- ASCC publications can be downloaded from www.ascc.gov.au

13.3 Australian Standards

The standards listed below are referred to in this code of practice. Those marked † are referred to in the OHS Regulation and must be complied with. Those marked ‡ are called up under the OHS Act as an industry code of practice. Those unmarked have no legislative standing but reflect good practice. Readers should refer to them, where necessary, to ensure compliance with their regulatory obligations or to obtain advice in helping to establish a safe workplace.

- ‡ AS 1337 *Eye protectors for industrial applications*
- † AS/NZS 1576 *Scaffolding: General requirements*
- ‡ AS 1657 *Fixed Platforms, walkways, stairways and ladders – Design construction and installation*
- ‡ AS1891.1 *Industrial fall arrest systems and devices Part 1: – Safety belts and harnesses*
- ‡ AS/NZS 1891.2 *Industrial fall arrest systems and devices Part 2 – Horizontal lifeline and rail systems*
- ‡ AS 1891.3 *Industrial fall arrest systems and devices Part 3: – Fall arrest devices*
- ‡ AS 1891.4 *Industrial fall arrest systems and devices Part 4: – Selection, use and maintenance*

- *AS 1892.5 Portable ladders Part 5: – Selection, safe use and care*
- *AS 2210 Occupational protective footwear*
- *AS/NZS 4389 Safety mesh*
- *AS 4494.1 Temporary roof edge protection Part 1 – General requirements*
- *AS 4494.2 Temporary roof edge protection Part 2 – Installation and dismantling*

APPENDIX A: SAFE WORKING ON ROOFS

HAZARD CHECKLIST

This checklist helps identify the hazards associated with carrying out work on roofs of commercial and industrial buildings. It covers the main topics outlined in this code, but does not cover all risks associated with working on roofs.

Site Address:
Principal Contractor:
Roofing Contractor:
Site Supervisor:

Hazards and Control Measures	Checked OK	
Has a perimeter scaffold been erected or has a guardrail system installed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using scaffolding or a guardrail system, has it got a guardrail, mid-rail and toe-board, or a guardrail and infill screen with a kick plate?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using scaffolding or a guardrail system on a roof with a pitch greater than 26°, does it have an infill panel?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using scaffolding, does it conform to AS/NZS 1576?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using scaffolding, is the platform 500 mm or less below the edge of the roof?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If the scaffolding's platform is more than four metres above the surrounding ground, has it been erected by a certified scaffolder?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using a guardrail system, is it appropriate for the type of roof?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If not using scaffolding or a guardrail system, are the reasons why it is impracticable to do so recorded?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If not using scaffolding or a guardrail system, is a fall arrest system being used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using a fall arrest system, have the anchorage points been inspected by a competent person?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using a fall arrest system, has a safe system for attaching to and detaching from the anchorage points been established?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using a fall arrest system, have all relevant personnel been trained in its use?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using a fall arrest system, has a rescue procedure for falls been established?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is safety mesh being used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Has the supplier of the safety mesh provided all relevant information to ensure its correct usage?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the safety mesh appropriate for the roof?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Have those installing safety mesh been trained in its installation?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are those installing safety mesh safeguarded against the risk of falling?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using existing safety mesh has it been inspected to ensure that it will withstand someone falling on it?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Has the safety mesh been certified as been installed correctly?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If the roof structure requires modification or bracing to support the safeguards identified in the safe work method statement, have the responsible people been consulted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is there a safe system of roof access and egress that reduces the risk of slips, trips and falls?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are ladders properly set up and secured?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are there clearly defined unloading and storage areas for the delivery and removal of materials and plant?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is a crane, tile elevator or builders' hoist used to transport material to the roof?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If mechanical lifting equipment is not used to transport material to the roof, is there a system that controls manual handling risks?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If a crane or builders' hoist is used, is the operator certified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Does the builders' hoist conform to AS 1418.7?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Does the crane conform to AS 1418.4 for tower cranes or AS 1418.5 for mobile cranes?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are appropriate warning signs (eg 'Persons Working Above'; 'Nail Gun In Use'; 'Elevator In Use' –displayed in a prominent position?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Have designated no-go zones been cordoned off – eg areas beneath the tile elevator?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If there are electrical hazards within four metres of the roof, have power sources been disconnected, insulated or otherwise made safe before proceeding with roof work?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Has induction training been provided to new workers?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are procedures in place to discontinue work if inclement weather renders roof work dangerous?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are systems of work provided if there are foreseeable manual handling issues?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Has a residual current device been attached to the leads/power source for portable electric power-tools? (This is particularly important when leads are being dragged over sharp edged metal roofs.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If asbestos is being handled, have all the necessary precautions been implemented?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Have workers been provided with the appropriate personal protective equipment and the training to properly use it?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is waste material isolated and contained for safe removal from the site?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the safety mesh appropriate for the roof?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Have those installing safety mesh been trained in its installation?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are those installing safety mesh safeguarded against the risk of falling?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If using existing safety mesh has it been inspected to ensure that it will withstand someone falling on it?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Has the safety mesh been certified as been installed correctly?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If the roof structure requires modification or bracing to support the safeguards identified in the safe work method statement, have the responsible people been consulted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is there a safe system of roof access and egress that reduces the risk of slips, trips and falls?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are ladders properly set up and secured?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Are there clearly defined unloading and storage areas for the delivery and removal of materials and plant?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is a crane, tile elevator or builders' hoist used to transport material to the roof?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If mechanical lifting equipment is not used to transport material to the roof, is there a system that controls manual handling risks?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If a crane or builders' hoist is used, is the operator certified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Does the builders' hoist conform to AS 1418.7?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Checklist Completed By (Print Name)

Signature

Date

If NO is indicated, take action to eliminate or control the hazard

APPENDIX B: ROOF SAFETY MESH HANDOVER AND ROOF ACCESS CERTIFICATE

Project name: _____

Location: _____
(Address and sub-site)

Mesh installer: _____ Roof section: _____

To be completed by the roof plumber	
Mesh Criteria Do the safety mesh materials comply with the performance requirements of AS / NZS 4389:1996?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Material Certification Test certificate for the mesh attached Manufacturers label or equivalent attached	Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Placement of Mesh Has the safety mesh been placed in accordance with AS / NZS 4389:1996? If not, has the safety mesh been placed in accordance with or manufacturers recommendations?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do the side laps comply with the following requirements? The run of mesh should be side lapped by at least 300 mm and have an intermediate fixing by 2 mm staples between each purlin spacing.	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do the end joins comply with the following requirements? The recommended method for fixing the mesh to metal purlins and joining mesh is to pass each longitudinal wire through a hole drilled in the top of the purlin and tie it off with at least four full turns around the wire. OR As per longitudinal wire joining method as shown in this code of practice	Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>

Roof guardrail installed	Yes <input type="checkbox"/> No <input type="checkbox"/>
Roof access installed	Yes <input type="checkbox"/> No <input type="checkbox"/>

Comments

Name: _____ Position: _____

Signed: _____ Date: _____ / _____ / 20_____

Roof Access

To be completed by a nominated representative of the principal contractor or the controller of the premises

The information above has been received and sighted and as such access is granted to the following section of roof:

Roof access granted to (refer to grid and other limitations to define approved area of access) –

Comments

Name: _____ Position: _____

Signed: _____ Date: _____ / _____ / 20_____



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