



Working at Heights Standard Operating Procedure

1. Purpose

This Standard Operating Procedure establishes safe working practices for overhead work, and work at heights (excluding abseiling activities) in all areas of Central Coast Region operated facilities. The aims are to:

- Prescribe safe working practices for overhead work and when working at heights by the establishment of rules and guidelines, including the use and wearing of suitable safety equipment; and
- Limit access to areas where overhead work and work at heights is in progress and to establish the criteria for entry into restricted areas.
- Safety measures to protect persons from objects dropped by persons working at heights.

In all cases, work at heights where there is a risk of falling shall be covered by a formal risk management process and shall include a recovery plan.

All persons working at heights shall be trained, competent and authorised by the Region Commissioner.

2. Scope

The procedure will apply equally to:

- working platforms
- use of lift boxes
- use of scaffolding
- use of elevating work platforms
- working on mobile equipment
- ladders
- fall arrest devices used as PPE



3. Procedure

3.1 Control Measures

Should a person be required to work where there is the potential to fall, control measures shall be implemented to protect persons from the risk of falling. Control measures, in order of preference are:

- Alternative method
- Erecting a physical barrier
- Providing personal fall protection

3.2 Fall Protection

3.2.1 Physical Barriers

These can be fall protection covers, edge protection systems, or working platforms.

3.2.2 Personal Fall Protection

Karabiners and snap hooks shall be self-closing or manual locking. They shall be capable of being opened only by at least two consecutive deliberate actions.

Persons shall be competent in the use of fall protection systems prior to use.

Persons using personal fall protection shall not work in isolation.

Personal fall protection systems consist of two types:

1. travel restraint systems
2. fall arrest harness systems

Travel Restraint System does not allow a person to get into a falling situation by tethering the person to the structure, short of the danger area. They could consist of:

- industrial rope systems (twin rope systems used to provide access)
- fall protection systems of a restraint harness connected to a restraint line or anchorage point
- retractable lanyard connected to a restraint line or anchorage point. **You should not use the retractable lanyard as a back-bracing device.**

Fall Arrest Harness System designed to arrest the fall of a person. These normally consist of:

- fall-arrest harness connected to a lanyard assembly and attached to a fall-arrest static line or anchorage point where there is a risk of free fall
- retractable lanyard can only be used directly above the head and must have its own built in shock absorbing device. **You cannot attach a shock absorbing lanyard to a retractable lanyard.**

All fall restraints are to be in accordance with AS 1891.4 (2000) - Industrial Safety Belts and Harnesses - Selection, use and maintenance.



When selecting a restraint, consideration shall be given to:

- Freedom of movement
- Degree of comfort
- In the event of falling, security against injury from
 - Impact with the ground or adjacent structures
 - Belt or harness from sudden fall arrest

3.2.3 Fall Protection Covers

All holes or penetrations must be protected to prevent persons falling through these openings. Fall protection covers are suitable for placing over these, but must be designed to be capable of supporting the impact of a person falling onto it (minimum of 1.0 kN).

Fall protection covers could be made of solid sheeting (timber or plywood) or mesh.

These must be securely fastened over the hole, and signs shall be attached to warn persons that there is a hole underneath. The typical sign could say: DO NOT REMOVE PENETRATION BELOW.

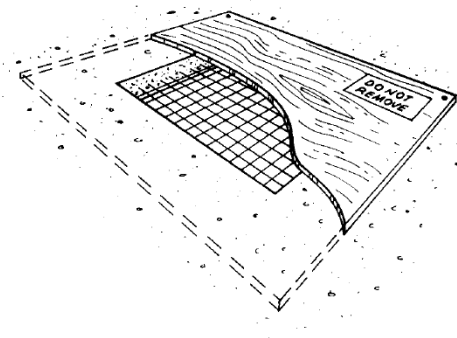
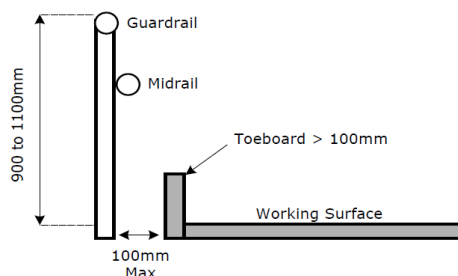


Figure 1 - Fall protection cover over mesh cast in floor

3.2.4 Edge Protection Systems

These are barriers erected around the edge of a building, structure or penetration consisting of guard railing or containment sheeting. Where a guardrail is used, it must **NEVER** be used without a mid-rail (unless balustrade type railing is used). The guardrail/mid-rail system is a protective barrier attached to the structure by posts and should be used on all exposed edges. The rails need to be able to withstand the impact of a person falling against it, run parallel to the working surface and not be further than 100mm outside the edge of the working surface. Guardrails shall in all cases, be between 900 - 1100mm above the working surface with a central mid-rail.





Where there is any likelihood of materials, tools, etc., falling from the working surface, a TOEBOARD shall be used. This protective structure shall be a minimum of 100mm high. It will need to be higher if stored materials exceed this height.

A Formal Risk Assessment including a recovery plan shall be completed in conjunction with the ARC Campsites and approved by the Region Commissioner when working at heights and outside edge protection.

3.2.5 Exclusion Zone

An exclusion zone is an area barricaded off for the purpose of excluding personnel from an area where there is a danger of objects falling.

3.3 Travel Restraint System

Are used to prevent a person getting in a situation in which they could fall. Travel restraint systems shall not be used when there is a risk of free fall or unrestrained fall either vertically or on slopes steeper than 15° or at a lesser slope where footing cannot be maintained safely.

Travel restraint systems, as a minimum, shall be used for work conducted within 2 metres of an unprotected edge.

3.4 Fall Arrest Harness System

Before a fall arrest harness system is used, the work area shall be inspected to ensure there are no obstructions in the potential fall path. Any obstructions shall be removed prior to work commencing.

A fall arrest harness shall be used in conjunction with a lanyard assembly fitted with a personal energy absorber and attached to an anchorage point or static line. The personal energy absorber may be a separate item or manufactured into the lanyard.

The harness shall incorporate hardware for an attachment to the lanyard assembly, located in such a position that the wearer, whether conscious or not, is retained in a head up position in the event of a fall.

The lanyard assembly shall be as short as possible and the working slack not more than 2 metres when used in conjunction with a fall arrest harness system to minimise the pendulum effect. This 2-metre length is inclusive of the personal energy absorber and attachment fittings.

The components of the fall arrest harness system shall be compatible.



3.5 Anchorage Points

Anchorage points and static lines shall have a minimum force capacity of 15kn. Permanent anchorage points and static lines shall be certified by an engineer.

An anchorage point of a travel restraint system should be positioned to ensure that the restraint line does not allow the person wearing the system to free fall.

The fall arrest anchorage point (fixed or travelling on static lines) should be located so that the lanyard can be attached before the user moves into a position where he or she would be at risk from a fall.

3.6 Maintenance of Personal Fall Protection Equipment

Personal fall arrest equipment shall be inspected prior to every use by the wearer, taking note of the following points:

- Review general overall condition of the device
- Check the condition of the webbing and associated stitching
- Open and close all fittings associated with the device
- Inspect the lanyard for any signs of damage
- Check the personal energy absorber

ARC Campsites shall ensure that detailed inspections are conducted every 6 months by a competent authority. This inspection shall be in the form of a detailed visual inspection of all components by a competent person to comply with all relevant Australian Standards.

Record files shall be maintained by the competent person conducting the inspection in each section for all personal fall protection equipment. An up-to-date register of inspections shall be recorded in Personal Fall Arrest Equipment Register.

If the equipment has been used to arrest a free-fall, the equipment shall be withdrawn from service and disposed of, or alternatively, inspected and tested, in accordance with requirements of AS 2626 Industrial Safety Belts and Harnesses- Selection, Use and Maintenance prior to return to service.

3.7 Elevating Work Platforms

Elevating work platforms shall be used in accordance with AS 2550.10 – Elevating Work Platforms.

Personnel shall not enter or leave the platform when elevated except in an emergency unless each of the following conditions are met:

- a) A risk assessment shows that this alternative means of access is safer than all other alternative means of access.
- b) The structural adequacy of the landing area has been established, and the landing area is clear.
- c) Where the landing is at the edge of a structure, the maximum gap between the platform and landing shall not exceed 100mm, the platform shall be secured (e.g. tied) to a suitable point on the landing, and access and egress shall not take place unless a safety harness is properly worn and attached to a suitable anchorage point on the structure.



- d) Where the landing is an area away from the edge of the structure, the landing point shall not be less than 2 metres from the edge of the structure, where any potential fall exists.
- e) The base controls shall be tagged to indicate the equipment is in use and to caution against interference.
- f) Safety harnesses shall be worn by personnel on the platform of a boom type elevating work platform and be secured to a suitable anchor point provided for the purpose.

3.8 Workboxes

Work boxes shall be designed by a competent person and built per AS 1418. The mass of the box and the safe working load shall be marked on the box.

When attached to an item of plant, or suspended from a crane, the work box shall not exceed the manufacturer's safe working load.

A crane used with a work box shall:

- be fitted with a safety hook
- be equipped with a dead man control on power lowering to produce self-centring and automatic brake engagement
- be equipped with a lock-out control to prevent free fall of the work box and its contents
- only lift personnel and tools required for the task (not to be used to transport any other equipment or materials)

Where a crane is used in conjunction with a work box, the operator of the crane shall:

- remain at the controls of the crane at all times while the work box is occupied by any person
- ensure that at all times the work box and its contents are moved under powered conditions
- ensure that, when the jib of the crane is at its maximum radius for the task to be performed, the safe working load for the crane in this configuration when divided by 2 is equal to or exceeds the total load of the work box and its contents

3.9 Scaffolding

- All scaffolding shall be erected in accordance with AS 1576, SAA Scaffolding Code. Scaffolds over 4 metres in height, or where a person may fall 4 metres, shall be erected by a competent person for the type of Scaffold and who is authorised by the Region Commissioner. Minimum requirement is a basic scaffolders ticket.
- Persons erecting scaffolds shall use a fall-prevention system in situations where a fall is possible or where it is not possible to maintain three points of contact with the scaffold, i.e. when there is a need to use two hands to perform work.
- Incomplete scaffolds are to have barriers erected on the access points and out-of-service tags placed on each such barrier.



- Persons working from scaffold platforms shall not leave the confines of the platform edge protection without a fall-arrest system.
- Mobile scaffolds may be used where it is not practicable or economical to use fixed scaffolding or as determined by the formal risk assessment.
- A mobile scaffold height shall be constructed in accordance with the required standard.
- Mobile scaffolding shall only be used:
 - where there is a requirement for regular movement of the working platform.
 - the supporting surfaces are hard and level.
 - only when stationary and the castors or wheels are locked.

The use of scaffolding over a long term must be approved by the Region Commissioner and shall be inspected on monthly intervals by an authorised scaffolder and the SCAFF-TAG system shall be used in accordance with AS4576.

3.10 Protection from Falling Objects

Where overhead work is to be performed and there is a risk of equipment, materials or tools falling from the elevated position, then a “drop zone” shall be established below the elevated position.

A competent person on the job shall assess the location of the overhead work and estimate the extent of the drop zone below with respect to:

- the height of the work above the lower level
- the possible deflection of falling objects by structures, pipes or equipment in the area

The drop zone shall be cleared of all personnel and mobile/portable equipment while static equipment is to be protected in the event of falling objects.

A rope barrier (or similar) shall be erected to completely surround the drop zone and on each side a sign shall display “DANGER - MEN WORKING OVERHEAD” or similar. The height of the barrier shall be approximately one metre above floor level and shall be kept in place for the duration of the overhead work.

3.11 Fixed Platforms, Walkways, Stairways and Ladders

The design, construction and installation of fixed platforms, walkways, stairways and ladders shall be in accordance with AS 1657 – Fixed Platforms, Walkways, Stairways and Ladders. Where the application of this standard is not practicable, a risk assessment shall be conducted by competent person to ensure that there is no unacceptable residual risk and the risk assessment has been approved by the Region Commissioner.

3.12 Safe Use of Portable Ladders

Portable ladders used at Central Coast Region operated facilities shall be designed in accordance with AS 1892. Permission from the Region Commissioner shall be obtained by persons using a ladder as a working platform when working at heights and/or outside edge protection.



Ladders constructed on site for fixed platforms, walkways or stairways shall comply with AS 1657 - Fixed platforms, walkways, stairways and ladders.

Portable step ladders shall:

- not be used on working platforms to gain height above the protected edge unless permission given by Region Commissioner
- be used only in the fully opened position
- be of a length that ensures a person's feet are not positioned any higher than the third highest tread

Single and extension portable ladders shall:

- be pitched at a slope of not less than an angle of 1 horizontal to 4 vertical or of not more than an angle of 1 horizontal to 6 vertical
- extend 1m above the landing or surface where a person can gain access
- be constructed from either fibre glass or timber without metal bracing or strapping for electrical work
- be secured against movement and supported from a firm, level, non-slip surface
- not be used in access areas or within the arc of any door opening unless the access is barricaded and signed and the doors guarded or securely blocked

When a single or extension ladder is used against a wall or flat surface, and it is not possible to secure the ladder, the ladder shall be footed by an assistant at all times. Only one person shall be on a ladder and shall face the ladder having three points of contact at all times until secured by a fall-prevention system.

CAUTION: A person ascending or descending a ladder shall not carry any item of equipment or tool. Equipment and tools will be hauled up only after secured by a fall-prevention system.

4. Audit and Review

The individual Standard Operating Procedure will be reviewed:

- Three yearly.
- When triggered by any event or findings that identify improvements in the controls that effectively manage the identified hazards.

5. Definitions

Competent Person – Person assessed as being able to perform a task.

Edge Protection – A system of guardrails, mid-rails and toe-boards compliant with AS 1657.

Exclusion Zone – An area barricaded off for the purpose of excluding personnel from an area where there is a danger of objects falling.

Fall from Heights – Falling from one level to another lower level.

Falling Object – A situation where any object used in an elevated position has the capacity of falling.



Fall Restraint System – A work positioning harness connected to a restraint line and attached to a fall prevention static line or an anchorage point which prevents a person getting into a situation where they could fall.

Fall Arrest Harness System – Means a system designed to arrest the unintended fall of a person. It consists of a fall arrest harness connected to a lanyard assembly and attached to a fall arrest static line or a safety line on an anchorage point where there is a risk of free fall.

Lanyard – A line used to connect a person via a safety harness to an anchorage point or static line or safety line.

Ladder Fall Arrest Device – Travels along a fall arrest static line, parallel to a ladder and locks to the line when loaded.

Personal Protective Equipment (PPE) – Clothing equipment and/or substances which, where worn or used correctly, protects all or part of the body from foreseeable risks of injury or disease in the workplace.

Responsible Person – A person who has the demonstrated skills and knowledge required to perform a task to a standard.

Rule – A rule is a rule or Regulation made for the carrying out of requirements of the Workplace Health and Safety Act.

Shall and Should – The word “shall” is to be understood as mandatory and the word “should” as non-mandatory advised or recommended.

SOP – Standard Operating Procedure.

Static Line – A horizontal line connected to at least 2 fixed anchorage point to which a restraint line can be attached to increase the area that can be covered by a person wearing a fall protection system.

Safety Line – A line used as a back up to arrest a limited free fall in the event of a failure of the working line or its attachments.



6. Document Information

6.1 Reference Information

Reference information, listed in **Table 6-1** below, is information that is directly related to the development of this document or referenced from within this document.

Reference
Queensland Branch Scouting Instructions
Queensland Advisory Standards for Falls from Heights, and Falling Objects
Queensland Government: Managing the risk of falls at workplaces Code of Practice 2011
AS 1576 – SAA Scaffolding Code
AS 1892 – SAA Ladder Code
AS 2550 – Safe use of cranes
AS 4576 – Guide for Scaffolders

Table 6-1 - Reference Information

6.2 Change Information

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in **Table 6-2** below.

Version	Date	Review Team	Details of Change
1.0	01/04/2017	Dougal McWhinney	Document created

Table 6-2 - Reference Information