

PRO-4.5-0001-1-05

Working at Height

Document Owner:	Bill Kruesi	HSSE Manager - Asset Mgmt.
Approved By:	Owen Quake Bill Kruesi	ANZ Engineering Authority HSSE Manager - Asset Mgmt.
Prepared By:	Adrian Connolly	Control of Work and Contractor Management Advisor
Document Status:	Approved	
Version Number:	4	
Approved Date:	22-Aug-2018	
Next Review Due By:	22-Aug-2021	

To review changes refer to the 'Version Summary' at the end of this document.

Copyright © 2018 BP p.l.c. All rights reserved.

This document and any data or information generated from its use, are classified, as a minimum, BP Internal. Distribution is intended for BP authorized recipients only. The information contained in this document is subject to the terms and conditions of the agreement or contract under which this document was supplied to the recipient's organisation. None of the information contained in this document shall be disclosed outside the recipient's own organisation, unless the terms of such agreement or contract expressly allow, or unless disclosure is required by law.

Contents

1. Purpose	3
2. Scope.....	3
3. Terms, Definitions and Abbreviations	3
4. Roles and Responsibilities	5
5. Methodology.....	5
5.1. General Requirements	5
5.2. Work on Ground.....	6
5.3. Work on Solid Construction	6
5.4. Fall Prevention Devices.....	8
5.5. Work Positioning Systems.....	11
5.6. Fall Arrest Systems	13
5.7. Ladders	15
5.8. Emergency Procedures for Falls.....	18
6. Verification	19
7. Associated Documents.....	19
8. External References	20
9. Version Summary	21

List of Tables, Diagrams and Figures

Table 1: Terms, Definitions and Abbreviations	3
Table 2: Roles and Responsibilities.....	5
Figure 1 - Examples of different types of EWP.....	9
Figure 2 - Example of an engineer-designed workbox with safety harness and lanyard assembly, correctly positioned on the forklift tynes.....	10
Figure 3 - Trestle ladder scaffold with guard rails and outriggers for stability.	11
Figure 4 - Operator using an ascender in an industrial rope access system.	12
Figure 5 - Restraint technique options.....	13
Figure 6 - Example of considerations when assessing suitability of fall arrest equipment....	15
Figure 7 - A step platform can provide a stable work surface	15
Figure 8 - Example of safe ladder use.....	17
Figure 9 - Examples of unsafe ladder use.....	18
Table 3: Required References.....	19
Table 4: Document Version Summary.....	21

1. Purpose

Whenever BP conducts construction, maintenance, demolition, remediation and other similar work that are typical of our industry, there is the potential for harm to people and the environment and for damage to equipment. This document provides requirements for Working at Height in support of *PRO 4.5-0001-0-01 Control of Work* and *WPCG-PRO-01 Work Authorisation*.

This procedure sets out a required approach to Working at Height in accordance with BP's Golden Rules of Safety, the requirements of *GDP 4.5-0001 Control of Work*, Annex1: Task Requirements: 1.4 Working at Height and OMS Group Essentials 3.2.1 and 4.5.1. The document defines the requirements that apply to Working at Height within ANZ MS&L to protect personnel from injury and property from damage.

This procedure specifically details the requirements of the following documents:

- Group Defined Practice (GDP); [GDP 4.5-0001_2016 Control of Work](#)

2. Scope

The requirement specified in this procedure applies equally to BP employees, contractors and visitors engaged in the ANZ MS&L business.

Specific sites, areas and activities may have more detailed OMS requirements and where these exist the requirements will be specified in local procedures, safe work instructions, manuals, handbooks or specific standards.

3. Terms, Definitions and Abbreviations

Table 1: Terms, Definitions and Abbreviations

Anchorage	A secure point for attaching a lanyard, lifeline or other component of a travel restraint system or fall-arrest system. Anchorages require specific load and impact capacities for their intended use.
Competent person	A person who has, through a combination of training, qualification and experience, acquired knowledge and skills enabling that person to correctly perform a specified task.
Edge Protection	Includes guard rails, solid balustrades or other structural components.
Elevating Work Platforms (EWPs)	These include scissor lifts, cherry pickers, boom lifts and travel towers. There are battery powered and internal combustion engine types. Some are designed for hard flat surfaces only, while others are designed to be operated on rough terrain.

Fall Prevention Device	A fall prevention device is any equipment that is designed to prevent a fall for temporary work at heights, and once in place does not require any further adjustment by workers using the device.
Fall Arrest System	A system whose purpose is to safely arrest a fall. It may consist of a harness, lanyard and energy absorber connected to an anchorage point or anchorage system. Industrial safety nets are also a form of fall arrest system.
Fall Restraint System	A system whose purpose is to limit a person's movement by physically preventing the person reaching a position at which there is a risk of a fall (e.g. unprotected edge). It consists of a harness that is connected by a lanyard to an anchorage or horizontal life line.
Free fall	Any fall or part of a fall where the person falling is under the unrestrained influence of gravity over any fall distance, either vertically or on a slope on which it is not possible to walk without the assistance of a handrail or hand line.
Industrial rope access systems	Industrial rope access systems are used for gaining access to and working at a workface, usually by means of vertically suspended ropes. The main purpose of the system is to gain access to a work area rather than to provide backup fall protection.
Inertia reel	(Also known as a self-retracting lanyard or fall-arrest block) is a type 2 or 3 fall-arrest device that arrests a fall by locking onto a line and at the same time allows freedom of movement.
Karabiners	Metal types of connectors that can be attached to anchorage points. They come in a variety of sizes, shapes and locking mechanisms to suit various applications. They should be self-closing and self- or manual-locking and capable of being opened only by at least two consecutive deliberate manual actions.
Lanyard	An assembly consisting of a line and components which will enable connection between a harness and an anchorage point. It may incorporate an energy absorbing component.
Personal energy absorber (or deceleration device)	A device which reduces the deceleration force imposed when a fall is suddenly arrested, and correspondingly reduces the loadings on the anchorage and the person's body. The energy absorber may either be a separate item or manufactured as part of the lanyard.
Restraint line	The line securing workers to a point of anchorage and is used to prevent a person from reaching a point from which he or she could fall.
Temporary work platform	Work platforms, other than permanently installed fixed platforms, used to provide a working area for the duration of the job and designed to prevent workers from falling. Temporary work platforms include scaffolds, elevated work platforms and work boxes, portable and fabricated platforms or any other platform that provides a working area and is designed to prevent a fall.
Total Fall Distance	The total distance a person is likely to fall during both the free and restrained parts of a fall and includes the maximum dynamic extension of all supporting components.
Workbox	A workbox is designed to be supported by a crane, hoist, forklift truck or other mechanical device to provide an elevated work area for persons working from the box. It consists of a platform surrounded by an edge protection system.
Work Positioning	A work positioning system enables a person to work supported in a harness under tension in such a way that a fall is prevented.
Working At Height	Where ever it is possible for a person performing work to fall.

4. Roles and Responsibilities

The roles and responsibilities associated with this procedure are listed in the following table.

Table 2: Roles and Responsibilities

Planner	The person planning the work at height is responsible for ensuring that the Permit Receiver is communicated the requirements of this procedure as part of the planning process prior to work. This may be discharged through the Permit Officer if under a Work Permit and the Permit Officer is a separate person. The planner role is often not a dedicated role and may be fulfilled by Project Manager, Project Engineer, Retail Field coordinator, etc.
Permit Officer	The Permit Officer is responsible for ensuring that the requirements of this procedure and conditions of the risk assessment for the task and any associated Work Permits are followed. <i>WPCG-PRO-01 Work Authorisation</i> documents the responsibilities of the Permit Officer for all Work Permits associated with working at height.
Permit Receiver	<i>WPCG-PRO-01 Work Authorisation</i> documents the responsibilities of the Permit Receiver for all Work Permits or Work Clearances (as applicable) associated with Working at Height. The Permit Receiver is responsible for confirming that workers use any fall control measures in the correct manner and have the required training and competency.
Site Representative	The Site Representative shall be the Site Manager or delegate, or if the site is unmanned it may be the Permit Officer. The Site Representative is responsible for the overall safety of the site. The Site Representative is responsible for communicating to the Permit Officer (work under a Work Permit) or Permit Receiver (work performed with a Work Clearance) the site operations that may affect the work at height. They shall also ensure that other parties on site that may be affected by the work at height are informed.

5. Methodology

5.1. General Requirements

- a) Whenever working at heights cannot be eliminated, a risk assessment of the task shall be completed.
- b) In accordance with *WPCG-PRO-01 Work Authorisation*, a WPCG Minimum Controls Checklist is required for all Minor Work at Height. If non-routine work at height cannot be completed in accordance with that checklist, a Work Permit is required to authorise the work.
- c) The hierarchy of control shall be used when assessing the risks associated with tasks to be conducted at height.
 - 1. Work on Ground
 - 2. Work on Solid Construction

- 3. Fall Prevention Devices
 - 4. Work Positioning Systems
 - 5. Fall Arrest Systems
- d) In some cases a combination of control measures may be necessary, for example using a work positioning system while working from an elevating work platform.
- e) Control measures should be implemented where there is a risk of injury irrespective of fall height. For low falls, assess the risk and provide reasonably practicable measures that reflect the risk. For example, there may be a risk of injury to workers standing on a narrow 1.7 metre high platform where they have to work near an open edge or a risk of falling onto an uneven surface with sharp edges or protrusions. In this situation it may be reasonably practicable to install a guard rail along the open edge of the platform. Sometimes it may not be reasonably practicable to provide guard rails. Other safe systems of work to provide adequate protection should be implemented. Control measures selected may create new hazards that need to be risk assessed and controlled, for example electrical risks from contact with overhead power lines or crushing and entanglement from plant such as elevating work platforms.
- f) The risk assessment for the task at height should consider the risks associated with dropped objects.

5.2. Work on Ground

- a) If it is reasonably practical to do so, the need to work at height should be avoided to eliminate the risk of a fall. Consider if the work can be conducted at ground level or in part as far as is reasonably practicable.
- b) Eliminating the need to work at height is the most effective way of protecting workers from the risk of falls. Examples of eliminating the risk by working on the ground include:
- 1. prefabricating roofs at ground level
 - 2. prefabricating wall frames horizontally, then standing them up
 - 3. reducing shelving heights so that workers can access items from ground level
 - 4. using tools with extendable handles, such as paint rollers (the risk of musculoskeletal disorders will need to be considered when deciding whether to use such tools)
 - 5. lowering equipment from height to repair or maintain it (e.g. change globes in permanent or temporary lighting)

5.3. Work on Solid Construction

- a) If it is not reasonably practical to eliminate the risk of a fall, consider if it is reasonably practicable to prevent a fall by working on solid construction. This may be an existing building or structure that is used as an existing place of work and includes safe access and egress from which there is minimal risk of a fall from one level to another. It is usually not necessary to implement additional control measures to manage the risk of falls for work at

floor level inside buildings that already comply with the requirements of the National Construction Code of Australia and Standards and Regulation for Building Construction in New Zealand.

- b) Working on a solid construction provides an environment where the likelihood of a fall may be eliminated. A solid construction for safe work at height is an area that is:
- 1. Structurally capable of supporting workers, material and any other loads applied to it
 - 2. Provided with barriers around its perimeter and around any openings from or through which a person could fall
 - 3. An even, accessible surface and gradient
 - 4. Provided with a safe means of entry and exit.

c) Structural Strength

Different types of work involve different loads on the supporting surface. The surface and its supports must be able to safely carry the expected loads, including workers, materials, tools and equipment. When in doubt, a structural engineer should determine the safe load capacity before use.

d) Barriers (or edge protection)

- 1. Edge protection should consist of guard rails, solid balustrades or other structural components. The top of the guard rail or component should be between 900 mm and 1100 mm above the working surface. If a guard rail system is used, it should also have mid-rails and toe boards or wire mesh infill panels.
- 2. The barrier should be designed and constructed to withstand the force of someone falling against it. Further guidance is available in *AS1657 Fixed platforms, walkways, stairways and ladders – Design, construction and installation*.

e) Openings and holes

Holes, penetrations and openings through which a person could fall should be made safe immediately after being formed. If a cover is used as a control measure, it must be made of a material that is strong enough to prevent persons or objects falling through and must be securely fixed to prevent any dislodgement or accidental removal.

f) Surface and gradient

- 1. Surfaces of solid construction should be non-slip, free from trip hazards and should generally not exceed 7 degrees (1 in 8 gradient). Cleated surfaces, which provide greater slip-resistance, should not be steeper than 20 degrees (1 in 3 gradient).
- 2. If grid-mesh or checker plate flooring is used for walkways and working platforms, ensure that:
 - i. Flooring panels are securely fixed and assembled in accordance with manufacturer's specifications
 - ii. Where possible, they are fitted to the structure prior to it being lifted into permanent position
 - iii. Each panel is fixed securely before the next panel is placed in position

- iv. During installation, this type of flooring is secured by tack welding, panel grips or other means to prevent movement before being fixed permanently
- v. If panels of grid mesh or checker plate flooring are removed, edge protection is provided and the gaps left due to removed panels are protected.

g) Entry and Exit

- 1. The solid construction shall have a safe means for people to get to, from and move around the work area, for example permanently installed platforms, ramps, stairways and fixed ladders. Further guidance is available in *AS 1657 Fixed platforms, walkways, stairways and ladders – Design, construction and installation*.
- 2. Portable ladders should only be used where the use of safer systems is not reasonably practicable.

5.4. Fall Prevention Devices

a) Temporary work platforms

A 'temporary work platform' is a working platform, other than a permanently installed fixed platform, used to provide a working area for the duration of the job. The design of the platform prevents workers from falling. Temporary work platforms include scaffolds, elevating work platforms, workboxes, portable or mobile fabricated platforms or any other platform that provides a working area and is designed to prevent a fall.

- **1. Scaffolding**
 - i. Scaffolding can be very effective protection in preventing falls. However, there are specific requirements that apply to some types of scaffold under local regulations which shall be followed.
 - ii. Scaffolding shall conform to *AS/NZS 4576 Guidelines for scaffolding* and the *AS/NZS 1576 Scaffolding series*.
 - iii. All scaffolding shall be erected, altered and dismantled by competent persons. In Australia, any scaffold from which a person or object could fall more than 4m (5m in New Zealand) shall be erected, altered, dismantled, inspected and tagged by a licensed scaffolder.
 - iv. Scaffolding shall be inspected by a competent person before use, after any incident that could affect its stability (such as a severe storm), after any repairs, and at least every 30 days;
 - v. Unauthorised access is prevented on scaffolding that is incomplete and left unattended (e.g. by attaching tags, danger tape, and/or warning signs at appropriate locations).
- **2. Elevating work platform (EWP)**
 - i. Workers operating the EWP shall be trained and instructed in safe operating procedures for the equipment, as well as the safe use of any required fall-arrest or fall-restraint equipment and emergency rescue procedures
 - ii. The platforms shall only be used as working platforms and not as a means of entering and exiting a work area unless the conditions set out in *AS 2550.10 Cranes, hoists and winches - Safe use - Mobile elevating work platforms*, section 5.9 are met

- iii. All elevated work platforms shall be inspected and maintained in accordance with manufacturer's specifications. Log books for the equipment shall be kept with the equipment.
- iv. All elevating work platforms shall be inspected before each use and this pre-start check shall be documented and kept with this equipment.
- v. Unless designed for rough terrain, the platforms should only be used on a solid level surface
- vi. The surface area should be checked to make sure that there are no penetrations or obstructions that could cause uncontrolled movement or overturning of the platform
- vii. Persons working in travel towers, boom lifts or cherry pickers shall wear a properly anchored safety harness.
- viii. Workers shall be licensed when operating boom-type elevating work platforms with a boom length of 11 metres or more.

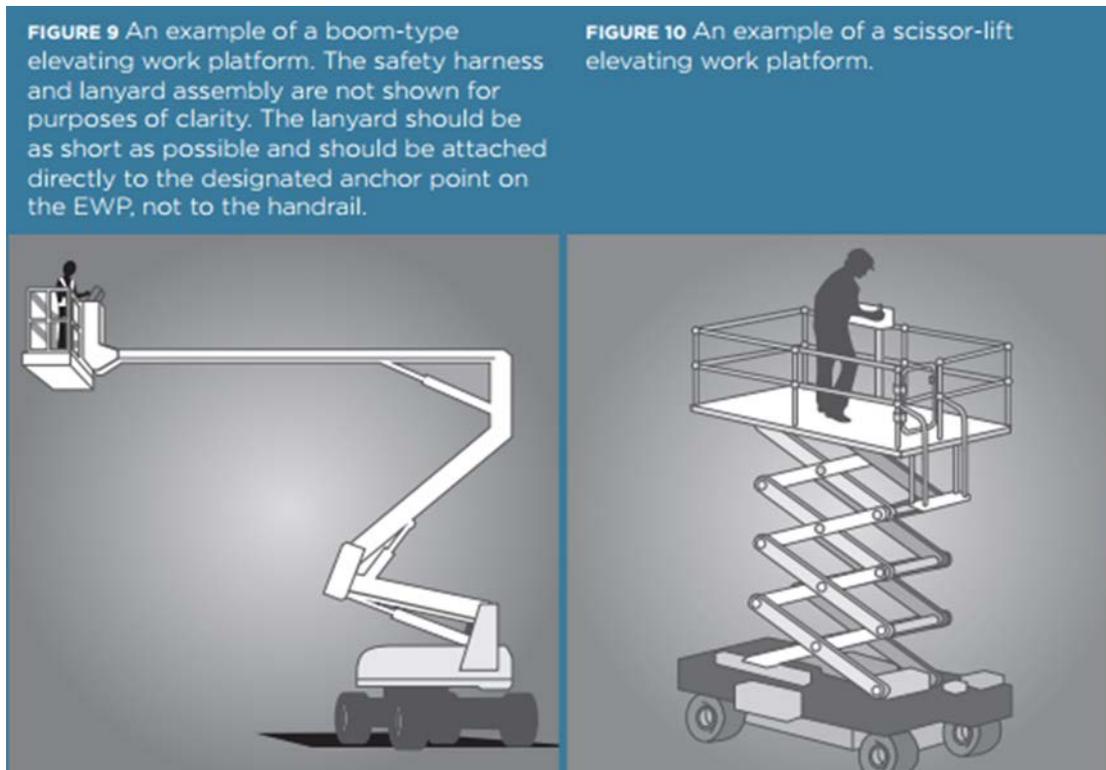


Figure 1 - Examples of different types of EWP

(Reference: *Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011*)

• **3. Workboxes**

- i. Where reasonably practicable other working platforms, such as an elevating working platform or scaffold, should be used in preference to a workbox.
- ii. Workboxes shall be designed in accordance with *AS 1418.17 Cranes (including hoists and winches) – Design and construction of workboxes*.
- iii. A workbox shall be fitted with a suitable anchorage capable of withstanding the fall forces specified in *AS/NZS 1891.4 Industrial fall-arrest systems and devices – Selection, use and maintenance*. Workers shall be attached to the anchorage by a lanyard and harness unless the workbox is fully enclosed.

- iv. Use of crane workboxes shall comply with *AS 2550.1 Cranes, Hoists and Winches— Safe Use— General Requirements*.
- v. A workbox fitted to a forklift must be securely attached to the forklift carriage and designed and constructed in accordance with *AS 2359 Powered Industrial Trucks*. Persons shall not be raised on the tynes of forklift trucks or a pallet
- vi. The workbox, lifting attachments and records shall be checked by a competent person before use. This pre-start check shall be documented and kept with the workbox.
- vii. Workers shall remain within the workbox while they are being lifted or suspended. They shall not enter or leave the workbox when it is suspended.
- viii. The lifting equipment is suitably stabilised at all times while the workbox is used.
- ix. The operator of the lifting equipment remains at the controls at all times.
- x. An effective means of communication between any person in the workbox and the operator is provided
- xi. No other device (for example, ladder or pallets) can be used to gain additional height from a workbox.
- xii. The safety gate shall be self-locking and kept shut when in the elevated position.
- xiii. A workbox shall not be suspended over persons
- xiv. The lifting equipment shall be fitted with the means to safely lower it in an emergency or an equipment power supply failure.

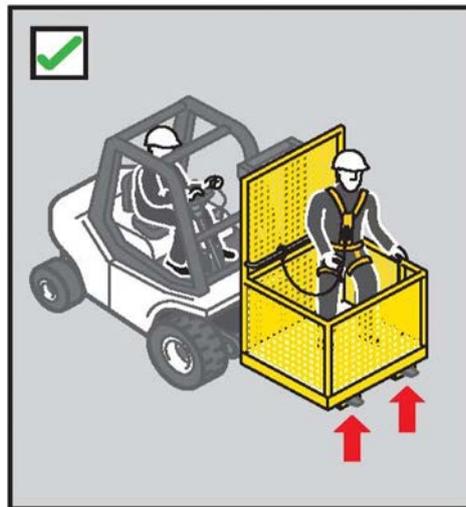


Figure 2 - Example of an engineer-designed workbox with safety harness and lanyard assembly, correctly positioned on the forklift tynes.

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)

4. Platforms supported by trestle ladders

- i. Alternatives to trestle ladders should be considered, such as small scissor lifts, light duty aluminium mobile scaffolds, boom arms and modular scaffolding.
- ii. Trestle ladder scaffolds are only suitable for use at heights greater than two metres when guard rails and toe boards are incorporated to prevent people and material falling off the working platform. The system (including planks)

- shall be assembled according to the manufacturer's specifications. Some trestle ladder scaffolds include outriggers to increase stability.
- iii. Trestle ladder scaffolds are only suited to light duty tasks such as painting and rendering. Work shall only be performed between the trestles. The minimum width of the working platform should not be less than 450 mm.

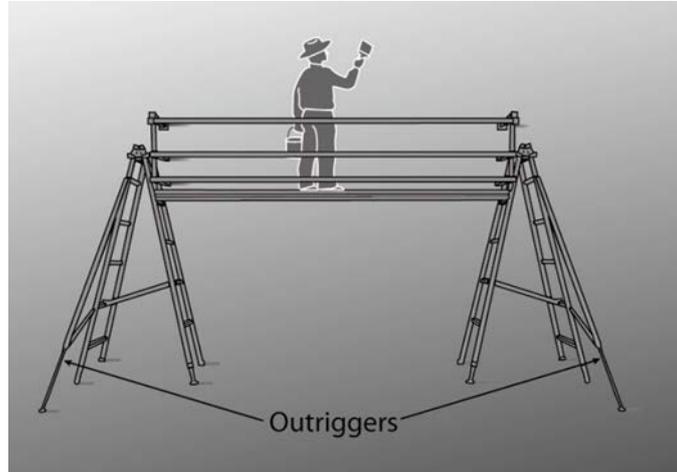


Figure 3 - Trestle ladder scaffold with guard rails and outriggers for stability.

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)

5.5. Work Positioning Systems

- a) Work positioning systems require a high level of competency on the part of the user and supervisors to ensure safe use. Users shall undertake a competency based course of training in the use of the system.
- b) Industrial rope access systems**
- 1. Other methods of accessing a workface should be considered (e.g. EWPs) before industrial rope access systems, as a high level of skill is needed for their safe use.
 - 2. Where it is necessary for industrial rope access systems to be used:
 - i. Operators shall be competent in the technique
 - ii. Operators shall not work alone, in case they require assistance in an emergency
 - iii. Industrial rope access systems are installed only in a location where it is possible to provide prompt assistance or rescue if required
 - iv. All equipment shall be checked regularly by a competent person
 - v. Prior to use, all fixed anchorage points shall be checked by a competent person before attaching the rope access lines
 - vi. A back-up system shall be used to protect the operator
 - vii. Two independently anchored ropes shall be used for each person
 - viii. All operators shall wear a full body harness
 - ix. As determined by the risk assessment for the task, appropriate personal protective equipment shall be used, e.g. helmets and gloves

- x. Barricades and signposts are placed on all access areas below the working area and anchorage locations to exclude and alert the public and other workers.
- xi. Further guidance on industrial rope access systems is available in *AS/NZS 4488 Industrial rope access systems series*.

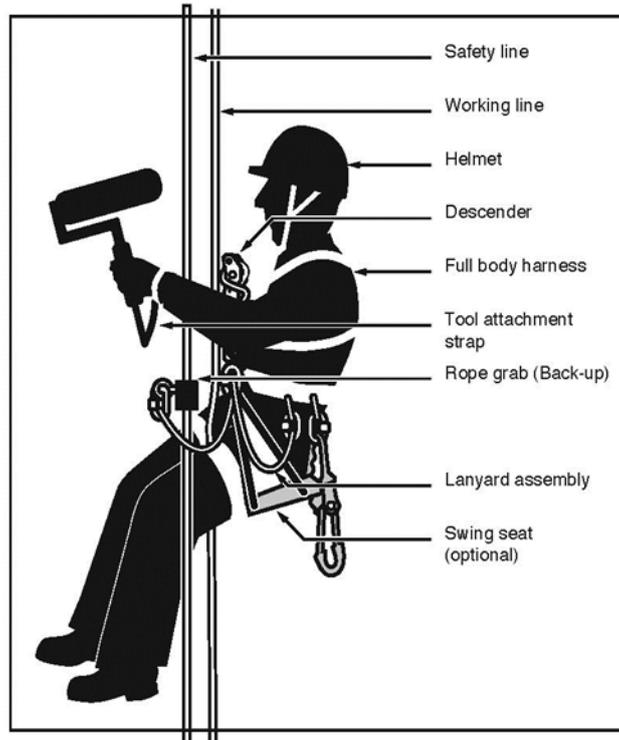


Figure 4 - Operator using an ascender in an industrial rope access system.

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)

c) Restraint technique

- 1. Restraint techniques should only be used if it is not reasonably practicable to prevent falls by providing a physical barrier (for example, a guard rail).
- 2. Fall restraint systems shall conform to *AS/NZS 1891 Industrial fall-arrest systems and devices*.
- 3. The user of a fall restraint system shall maintain secure footing without having to tension the restraint line and without the aid of any other hand hold or lateral support.
- 4. A restraint system shall be installed by a competent person in accordance with the manufacturer's instructions.
- 5. Users of the fall restraint system shall be competent in its use. They should complete the following training:
 - i. In Australia, *R110HS204A/D Work safely at heights*.
 - ii. In New Zealand, *US17600 Explain Safe Work Practices for Working at height* or *US25045 Employ Height Safety Equipment in the Workplace*.
- 6. Restraint anchorage shall be designed for fall-arrest loading.

- 7. An individual fall-arrest system should be used instead of restraint techniques if any of the following situations apply:
 - i. The user can reach a position where a fall is possible
 - ii. The user has a restraint line that can be adjusted in length so that a free fall position can be reached
 - iii. There is a risk that the user may fall through the surface, for example fragile roofing material
 - iv. The slope is over 15 degrees
 - v. There is other likely use or misuse of the system that could lead to a free fall.

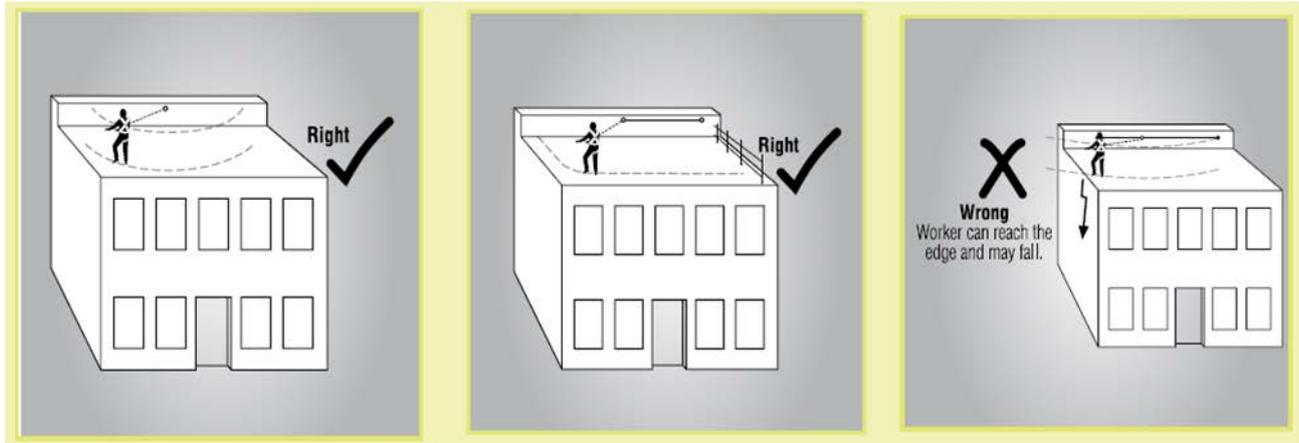


Figure 5 - Restraint technique options.

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)

5.6. Fall Arrest Systems

- a) A fall-arrest system is intended to safely stop a worker falling an uncontrolled distance and reduce the impact of the fall. This system should only be used if it is not reasonably practicable to use higher level controls or if higher level controls might not be fully effective in preventing a fall on their own.
- b) All equipment used for fall-arrest shall be designed, manufactured, selected and used in compliance with the *AS/NZS 1891 series of standards*.
- c) Individual fall-arrest equipment shall be permanently marked or labelled to indicate their purpose, correct use, limitations and other relevant information required of Australian and New Zealand standards for the equipment used.
- d) Each anchorage point should comply with the requirements in *AS/NZS 1891:4 Industrial fall-arrest systems and devices – selection, use and maintenance*. Each anchorage point should be located so that a lanyard of the system can be attached to it before the person using the system moves into a position where the person may fall.
- e) Persons using individual fall-arrest systems shall be trained in its safe use. They should complete the following training:
 - 1. In Australia, RIIOHS204A/D Work safely at heights

- 2. In New Zealand. *US17600 Explain Safe Work Practices for Working at height or US25045 Employ Height Safety Equipment in the Workplace.*
- f) Each component of the system and its attachment to an anchorage shall be inspected by a competent person before each use. Inspection of all components shall also be conducted at regular intervals in accordance with the manufacturer's specifications and the relevant standards. If any signs of wear or weakness are found during the inspection, the components or means of attachment shall be withdrawn from use.
- g) The system should be designed and installed so that the person travels the shortest possible distance before having the fall stopped. Fall-arrest systems, incorporating a lanyard, should be installed so that the maximum distance a person would free fall before the fall-arrest system takes effect is two metres. There should be sufficient distance between the work surface and any surface below to enable the system, including the action of any shock absorber to fully deploy. To determine if there is sufficient distance, consider:
- 1. The worker's height
 - 2. The height and position of the anchorage point
 - 3. The length of the lanyard
 - 4. Any slack in the horizontal life line
 - 5. Any stretching of the lanyard or horizontal life line when extended by a fall
 - 6. The length of the energy absorber when extended by a fall.
- h) Lanyards shall not be used in conjunction with inertia reels as this can result in an excessive amount of free fall prior to the fall being arrested.
- i) Workers using a fall-arrest system shall wear adequate head protection to protect them in the event of a fall.
- j) If the equipment has been used to arrest a fall it shall not be used again unless it has been inspected and certified by a competent person as safe to use.
- k) Snap hooks shall be of the double action type, requiring at least two consecutive deliberate actions to open. Snap hooks shall not be connected to each other as this could prevent the safe operation of the snap hook. Screw gate karabiners or hex nut connectors may sometimes be appropriate. Further guidance is provided in *AS/NZS 1891 Industrial fall-arrest systems and devices*.
- l) During the risk assessment for the task, consideration shall be given to the limitation of the fall arrest equipment if chosen as a control. As shown in Figure 1, in some circumstances, the equipment may not be effective in the event of a fall.
- m) A dual lanyard system shall be utilised to confirm that at least one connection point is maintained at all times when the work method requires employees to detach and re attach at height.
- n) A rescue plan shall be in place to recover personnel in the event of a fall – see section 5.8.

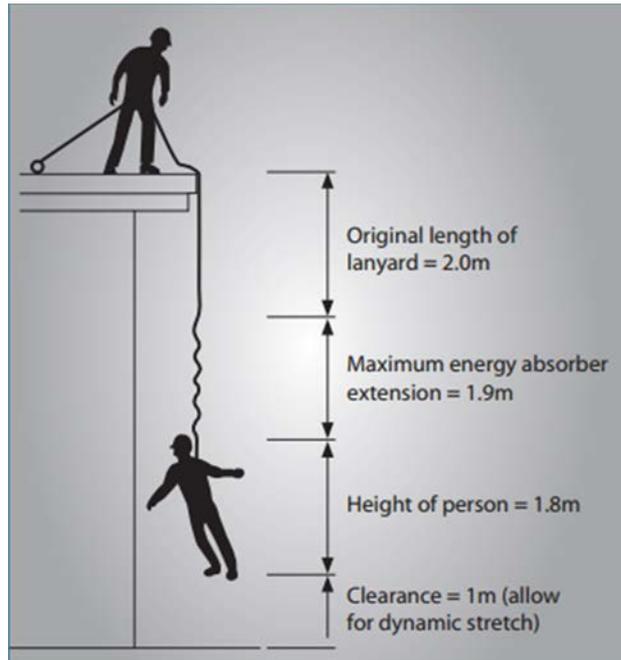


Figure 6 - Example of considerations when assessing suitability of fall arrest equipment

Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)

5.7. Ladders

- Ladders are primarily a means of access and egress. Many falls take place when people are working from ladders. Consider whether an elevating work platform or scaffolding would be safer and more efficient.
- Guidance on the selection, safe use and care of portable ladders is set out in *AS/NZS 1892 Portable ladders series*.
- The manufacturer's recommendations on safe for the ladder use shall be followed.
- A step platform or platform ladder shall be utilised in preference to working off an extension or single ladder if it is reasonably practicable to conduct the work from a step platform or platform ladder.

Figure 7 - A step platform can provide a stable work surface

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)



- e) Extension or single ladders should only be used as a means of access to or egress from a work area. They should only be used as a working platform for light work of short duration that can be carried out safely on the ladder in full compliance with this procedure.
- f) If ladders are used they must be selected to suit the task to be undertaken. In doing this, consider the duration of the task, the physical surroundings of where the task is to be undertaken and the prevailing weather conditions.
- g) Ladders shall have a load rating of at least 120 kg and be manufactured for industrial use.
- h) Where fixed or extension ladders are used for access or egress:
 - 1. A firm, stable work platform, free from obstructions, shall be available to step onto from the ladder.
 - 2. The ladder shall extend at least one metre above the stepping-off point on the working platform.
 - 3. Fall protection should be provided at the stepping-off point where people access the working platform.
- i) Whenever a portable ladder is used it shall:
 - 1. Have only light duty works undertaken while on the ladder, where three points of contact can be maintained, and tools can be operated safely with one hand.
 - 2. Be in good condition. The ladder should be inspected for faults, such as broken rungs, stiles and footing before it is used
 - 3. Be removed from service if damaged.
 - 4. Be set up on firm, stable and level ground.
 - 5. Be the correct height for the task to avoid reaching or stretching.
 - 6. Be the correct distance from the supporting structure. The distance between the ladder base and the supporting structure should be about one metre for every four metres of working ladder height (4:1 ratio).
 - 7. Be secured against displacement (i.e. slipping or sliding) and/or there is another person holding the base of the ladder.
 - 8. Have all the locking devices on the ladder secured.
 - 9. Have a slip resistant base, rungs and steps.
 - 10. Be used by a worker wearing slip resistant footwear

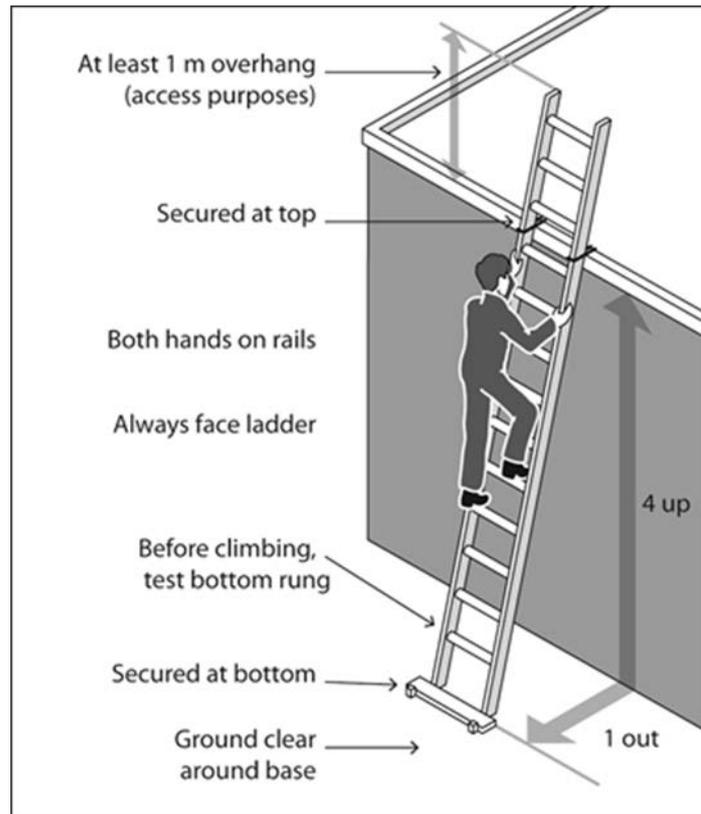


Figure 8 - Example of safe ladder use

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)

j) Portable ladders shall **not** be used:

- 1. For materials or tools to be carried in hand while climbing the ladder. A tool belt or other methods should be used to transport materials and tools to height.
- 2. In access areas or doorways unless a barrier is erected or the door locked shut
- 3. On scaffolding or an elevating work platform to get extra height
- 4. Next to power lines unless the worker is trained and authorised and the appropriate ladder is being used.
- 5. In very wet or windy conditions
- 6. Next to traffic areas (including pedestrian traffic as well as road), unless the working area is barricaded.
- 7. To carry out work such as arc welding or oxy cutting
- 8. For work over other people
- 9. In a manner that allows more than one person on the ladder at the same time.
- 10. In a manner that uses metal or metal reinforced ladders when working on live electrical installations
- 11. In a manner that uses the rungs to support the weight of the ladder and any person using the ladder.

- k) Except where additional and appropriate fall protection equipment is used in conjunction with the ladder, it is not safe to:
- 1. Use a stepladder near the edge of an open floor, penetration or beside any railing
 - 2. Over-reach (the centre of the torso should be within the ladder stiles throughout the work)
 - 3. Use any power or hand tool requiring two hands to operate, such as concrete cutting saws and circular saws
 - 4. Use tools that require a high degree of leverage force which, if released, may cause the user to over-balance or fall from the ladder, such as crowbars
 - 5. Face away from the ladder when going up or down, or when working from it
 - 6. Stand on a rung closer than 900 mm to the top of a single or extension ladder
 - 7. Stand higher than the second tread below the top plate of any stepladder (with the exception of three-rung step ladders).

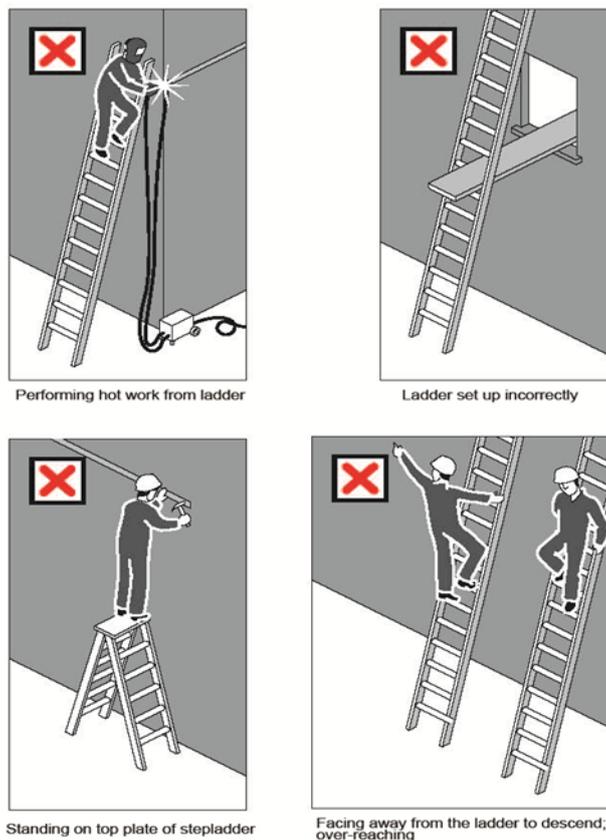


Figure 9 - Examples of unsafe ladder use

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, December 2011)

5.8. Emergency Procedures for Falls

- a) A person using a fall-arrest system could suffer suspension intolerance as a result of a fall. A task with fall-arrest system implemented as a measure to control risk shall establish reliable emergency and rescue procedures. Workers shall be provided with suitable and adequate information, instruction and training in relation to the emergency procedures.

- b) Methods of rescue for employees using personal fall arrest equipment shall include plans for the rapid retrieval of an individual in the event of a fall to avoid suspension trauma.
- c) Emergency procedures should take into account the following:
- 1. **Location of the work.** Consideration should be given to the accessibility of the work site, proximity to medical facilities, and whether the location is isolated or remote.
 - 2. **Communication** methods to be employed during an emergency.
 - 3. **Rescue equipment.** The provision of suitable rescue equipment will depend on the nature of the work and the control measures used, e.g. an emergency rapid response kit with man-made fibre rope, refer *AS/NZS 4142.3 Fibre ropes—Man-made fibre rope for static life rescue lines*. Selected rescue equipment should be kept in close proximity to the work area so that it can be used immediately.
 - 4. **Capabilities of rescuers.** Rescuers shall be trained to carry out their role in the rescue plan including their capability of using equipment provided for rescue.
 - 5. **Emergency procedures** should be tested to demonstrate that they are effective.
 - 6. **First aid.** Consider the first aid equipment and facilities for the administration of first aid.
 - 7. **Local emergency services** – if they are to be relied upon for rescue. Consider their response time and how they will be notified of an incident.

6. Verification

The key process steps outlined in this procedure shall be included in a Self-Verification Programme.

Refer to [PRO-8.2-0001-0-01 MS&L Self Verification Procedure](#) for further details to developing self-verification protocols.

7. Associated Documents

The following associated documents:

- Have been referenced in this procedure.
- Should be considered in understanding and applying the instructions provided in this procedure.

Table 3: Required References

Document Name	Document No	Document Location
Group Defined Practice - Control of Work	GDP 4.5-0001 2016	OMS Library
WPCG Work Authorisation	WPCG-PRO-01	WPCG website
Cranes (including Hoists and Winches) – Building Maintenance Units	AS 1418.13	SAI Global website

Scaffolding series	AS/NZS 1576	SAI Global website
Fixed platforms, walkways, stairways and ladders—Design, construction and installation	AS/NZS 1657	SAI Global website
Industrial fall-arrest systems and devices—Harnesses and ancillary equipment	AS/NZS 1891.1	SAI Global website
Industrial fall-arrest systems and devices—Horizontal lifeline and rail systems—Prescribed configurations for horizontal lifelines (Supplement to AS/NZS 1891.2:2001)	AS/NZS 1891.2 supp:1-2001	SAI Global website
Industrial fall-arrest systems and devices—Fall-arrest devices	AS/NZS 1891.3	SAI Global website
Industrial fall-arrest systems and devices—Selection, use and maintenance	AS/NZS 1891.4	SAI Global website
Portable ladders series	AS/NZS 1892	SAI Global website
Fibre ropes—Man-made fibre rope for static life rescue lines	AS/NZS 4142.3	SAI Global website
Roof Safety mesh	AS/NZS 4389	SAI Global website
Industrial rope access systems series	AS/NZS 4488	SAI Global website
Industrial rope access systems—Selection, use and maintenance	AS/NZS 4488.2	SAI Global website
Guidelines for scaffolding	AS/NZS 4576	SAI Global website
Cranes—Safe Use—Mast climbing work platforms	AS 2550.16	SAI Global website
Temporary edge protection series	AS/NZS 4994	SAI Global website
Safety nets: Safety requirements, test methods	BS EN 1263-1:2014	SAI Global website
Safety nets: Safety requirements for the positioning limits	BS EN 1263-2:2014	SAI Global website
MS&L Self Verification Procedure	PRO-8.2-0001-0-01	Controlled Document Register

8. External References

This procedure was prepared with reference to relevant legislation/regulations including but not limited to, relevant Acts, Regulations, Australian Standards and industry codes and practices.

Details of current legislation/regulations can be provided by the HSSE Team on request.

9. Version Summary

The table below provides a summary of version history of this procedure.

Table 4: Document Version Summary

Version	Prepared by	Description of Change	Date	MoC
1	Adrian Connolly	Document created	14 Nov 2014	
2	Adrian Connolly	Updates to document format and layout for readability. Minor spelling and grammar corrections. Updated content and format to closely align to Safe Work Australia: Managing the Risk of Falls at Workplaces Code of Practice at request of business representatives to have more guidance. No significant changes to minimum requirements for Working at Heights beyond current industry practices and regulatory requirements.	13 May 2016	
3	Adrian Connolly	Update to incorporate the WPCG Minimum Control Checklist requirements	15 Oct 2017	
4	Adrian Connolly	Minor update to implement WPCG-PRO-01 Work Authorisation and moved to current template.	22 Aug 2018	11449

End of Document