M&C-M Procedure

PRO-4.5-0001-1-05
Working at Height

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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 procedure sets out a required approach to Working at Height in accordance with the requirements of GDP 4.5-0001 Control of Work and OMS Group Essentials 3.2.1 and 4.5.1.

Relevant OMS element(s)

OMS 4.5 (Control of Work

Contents

List of Tables, Diagrams and Figures

To review changes, refer to the 'This procedure was prepared with reference to relevant legislation/regulations including but not limited to, relevant Acts, Regulations, Aus/NZ Standards and industry codes and practices.
Details of current legislation/regulations can be provided by the HSSE Team on request.

Version Summary' at the end of this document.

1. Scope

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

2. Methodology

2.1. General Requirements

1. Whenever working at heights cannot be eliminated, a risk assessment of the task shall be completed.
2. Authorisation for all work at height shall be obtained in accordance with WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand).
3. The hierarchy of control shall be used when assessing the risks associated with tasks to be conducted at height.
    a) Work on Ground
    b) Work on Solid Construction
    c) Fall Prevention Devices
    d) Work Positioning Systems
    e) Fall Arrest Systems
4. 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.
5. A combination of control measures may be used to minimise risks, so far as is reasonably practicable, if a single control is not sufficient for the purpose. In most cases, a combination of the control measures will provide the best solution to minimise the risk to the lowest level reasonably practicable.
6. You should also ensure that the control measures you select do not create new hazards, for example electrical risks from contact with overhead powerlines or crushing and entanglement from plant like EWPs. If any new hazards are created they must also be controlled.
7. The risk assessment for the task at height should consider the risks associated with dropped objects and the potential for others to be in the line of fire.

2.2. Work on Ground

1. If it is reasonably practicable 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.
2. 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:
   a) Prefabricating roofs at ground level
   b) Prefabricating wall frames horizontally, then standing them up
   c) Installing air-conditioning units at ground level
   d) Reducing shelving heights so that workers can access items from ground level
   e) 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)
   f) Lowering equipment from height to repair or maintain it (e.g. change globes in permanent or temporary lighting).

2.3. Work on Solid Construction

1. 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:
   a) Structurally capable of supporting workers, material and any other loads applied to it
   b) Provided with barriers around its perimeter and around any openings from or through which a person could fall
   c) An even, accessible surface and gradient
   d) Provided with a safe means of entry and exit.
2. 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.
3. Barriers (or edge protection)
   Barriers prevent a person falling over edges and into holes must be provided on relevant parts of a solid construction.

a) The barrier must be designed and constructed to withstand the force of someone falling against it.

b) Barriers should consist of guardrails, solid balustrades or other structural components, for example wire mesh supported by posts and provided with a reinforced top edge. The top of the guardrail or component should be between 900 mm and 1100 mm above the working surface. If a guardrail system is used, it should also have mid-rails and toe-boards or wire mesh infill panels.

c) If access is required to equipment, for example a hoist, it should be protected with gates or other means to prevent a person falling.

4. Openings and holes

d) A fall prevention device (for example a secure fence, edge protection, work platform or cover) must be used to provide and maintain a safe system of work where persons are working near and around holes, penetrations and openings through which a person could fall, if it is reasonably practicable to do so.

e) Holes, penetrations and openings must be made safe immediately after being formed, for example with covers, barricading or by embedded mesh. When mesh is used, an additional cover should be used to prevent things falling through the mesh.

f) If a cover is used as a control measure it must be made of a material strong enough to prevent people or objects falling through the hole, penetration or opening and should be securely fixed to prevent dislodgement or accidental removal. Covers over penetrations should be designed to safely withstand a point load of at least 2 kilonewtons—that is, 200 kilograms.

g) Plywood covers on their own are not preferred because:

i. the cover may be indistinguishable from other pieces of plywood

ii. it may be difficult to determine if the plywood is properly secured, and

iii. secured plywood covers can be unsecured to gain access and not be re-secured.

h) The cover should include signage indicating its purpose as a cover, for example 'DANGER HOLE BENEATH'

5. Surface and gradient

a) 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).

b) 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.

6. Entry and Exit

a) 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.

b) Portable ladders should only be used where the use of safer systems is not reasonably practicable.

2.4. Fall Prevention Devices

1. 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.

a) 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, with the additional BP requirements:

- scaffold ladders at the point of access or egress have a step-across distance of not more than 30 cm as measured from the centreline of the steps or rungs to the nearest edge of the landing area.
- The maximum height between successive landings, serviced by a portable ladder, shall not exceed 4 m.
- When installed externally, scaffold ladders are installed at between 90 and 135 degrees to the platform deck being accessed.

Figure 1 – angle of external scaffold ladders

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).

vi) Where mobile scaffolds are used, workers should be trained in their use, including on how to ensure the scaffold:

- remains level and plumb
- is kept well clear of powerlines, open floor edges and penetrations

- is not accessed until the castors are locked to prevent movement
- is not moved while anyone is on it, and
- is accessed using an internal ladder, except for low height platforms where this is not reasonably practicable.

b) Elevating work platform (EWP)

i) Workers operating the EWP shall be trained and instructed in safe operating procedures for the equipment, including safe work procedures to avoid crushing and electrical hazards, 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. Logbooks 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.

c) Workboxes

ix) Where reasonably practicable other working platforms, such as an elevating working platform or scaffold, should be used in preference to a workbox.

x) Workboxes shall be designed in accordance with AS 1418.17 Cranes (including hoists and winches) —Design and construction of workboxes. The fitting of a

redundant sling to prevent a single point of failure should also be considered in the planning of the lift.

xi) 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, unless working over water.

xii) If working over water in a work box, the fall arrest harness shall remain detached from the workbox. If the lanyard is not permanently attached to the harness, the lanyard shall remain clipped to the harness. The lanyard shall be free from the workbox (with the free end of the lanyard clipped back onto the harness). The local work health and safety regulator should be consulted as an exemption or deviation may be required from them for this safe work practice.

xiii) Use of crane workboxes shall comply with AS 2550.1 Cranes, Hoists and Winches—Safe Use—General Requirements.

xiv) 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.

xv) 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.

xvi) 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.

xvii) The lifting equipment must be suitably stabilised at all times while the workbox is used.

xviii) The operator of the lifting equipment must remain at the controls at all times.

xix) An effective means of communication between any person in the workbox and the operator is provided.

xx) No other device (for example, ladder or pallets) can be used to gain additional height from a workbox.

xxi) The safety gate shall be self-locking and kept shut when in the elevated position.

xxii) A workbox shall not be suspended over persons.

xxiii) The lifting equipment shall be fitted with the means to safely lower it in an emergency or an equipment power supply failure.

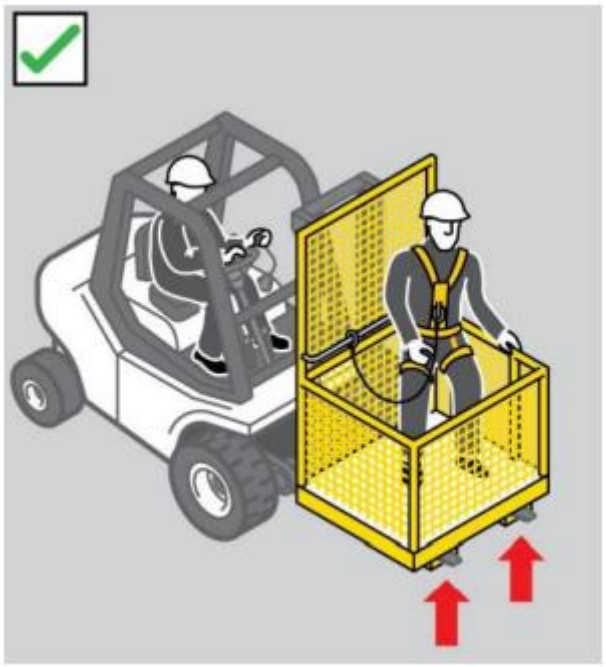

Figure 2 - An example of an engineer-designed work platform correctly positioned on the fork arms, with a safety harness and lanyard.

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

d) 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.

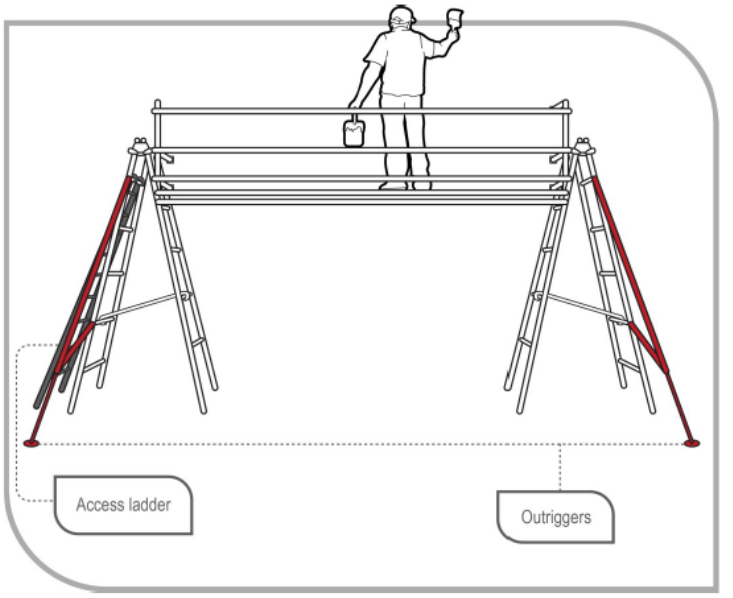

Figure 3 - Trestle ladder scaffold with guard rails and outriggers for stability.

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

2.5. Safety Mesh

Safety mesh Safety mesh is designed to prevent internal falls through a roof. If securely fixed, safety mesh provides fall protection for roof installers and offers long-term protection against falling for maintenance and repair workers.

Safety mesh does not prevent falls from the edge of a roof or through holes in a roof so it should always be used in conjunction with other types of fall prevention devices such as edge protection (e.g. guardrails), or other control measures such as fall arrest systems.

1. Safety mesh should comply with AS/NZS 4389:2015: Roof safety mesh, which specifies the minimum requirements for the design, construction, testing and installation of safety mesh for use in domestic, commercial and industrial building applications.
2. The mesh should be formed from 2 mm diameter wire, welded into a mesh with the longitudinal wires not more than 150 mm apart and the cross wires not more than 300 mm apart. Transverse wires should have a 450 MPa minimum tensile strength and longitudinal wires a 500 MPa minimum tensile strength.
3. Safety mesh should be installed by competent people in accordance with the manufacturer's instructions. Workers installing roof safety mesh must be protected against the risk of falling by using control measures like scaffolding, EWPs or fall arrest systems. The appropriate control measure will depend on what is reasonably practicable in the circumstances.
4. Particular care is required to ensure that the mesh is securely connected to the structure and the overlap between adjacent sections of mesh is sufficient to generate the necessary

strength to resist the force of a person falling onto it. The safety mesh should be covered by the roof cladding as soon as is reasonably practicable after it has been installed.

2.6. Work Positioning Systems

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.

1. Restraint technique

   A restraint technique controls a person's movement by physically preventing the person from reaching a position at which there is a risk of a fall. It consists of a harness that is connected by a lanyard to an anchorage or horizontal lifeline. It must be set up to prevent the wearer from reaching an unprotected edge.

   a) 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).

   b) Fall restraint systems shall conform to *AS/NZS 1891 Industrial fall-arrest systems and devices.*

   c) 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.

   d) A restraint system shall be installed by a competent person in accordance with the manufacturer's instructions.

   e) Users of the fall restraint system shall be competent in its use. They should complete the following training:

      i) In Australia, RIIWHS204D - 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.

   f) Restraint anchorage shall be designed for fall-arrest loading.

   g) 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.

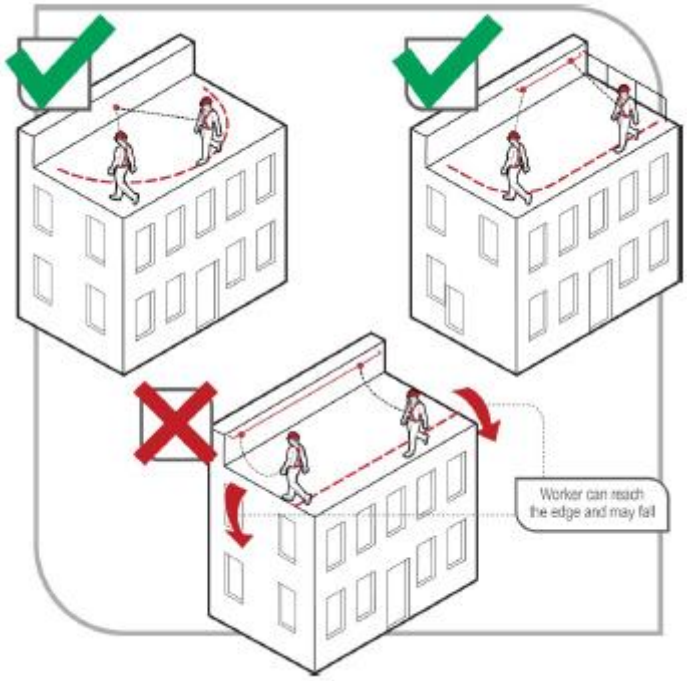

Figure 4 - Restraint technique options

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

2. Industrial rope access systems

   a) The use of work positioning systems must only be considered if it is not reasonably practicable to carry out work on the ground or on a solid construction, or by providing a fall prevention device, for example an elevating work platform (EWP).

   b) The use of industrial rope access systems is considered high risk construction work if it involves construction work where there is a risk of a person falling more than 2 metres.

   c) Where it is necessary for industrial rope access systems to be used:

      i) Operators shall be competent in the technique.

      ii) The rope access work must be supervised. Supervisors of rope access work should have the necessary experience and competence to supervise the rope access work and any potential rescue for each rope access under their supervision.

      iii) Operators shall not work alone; in case they require assistance in an emergency.

      iv) Industrial rope access systems are installed only in a location where it is possible to provide prompt assistance or rescue if required.

      v) All equipment shall be checked regularly by a competent person.

vi) Prior to use, all fixed anchorage points shall be checked by a competent person before attaching the rope access lines.

vii) A back-up system shall be used to protect the operator.

viii) Two independently anchored ropes shall be used for each person.

ix) All operators shall wear a full body harness.

x) As determined by the risk assessment for the task, appropriate personal protective equipment shall be used, e.g. helmets and gloves.

xi) 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.

xii) Further guidance on industrial rope access systems is available in AS/NZS 4488 Industrial rope access systems series.

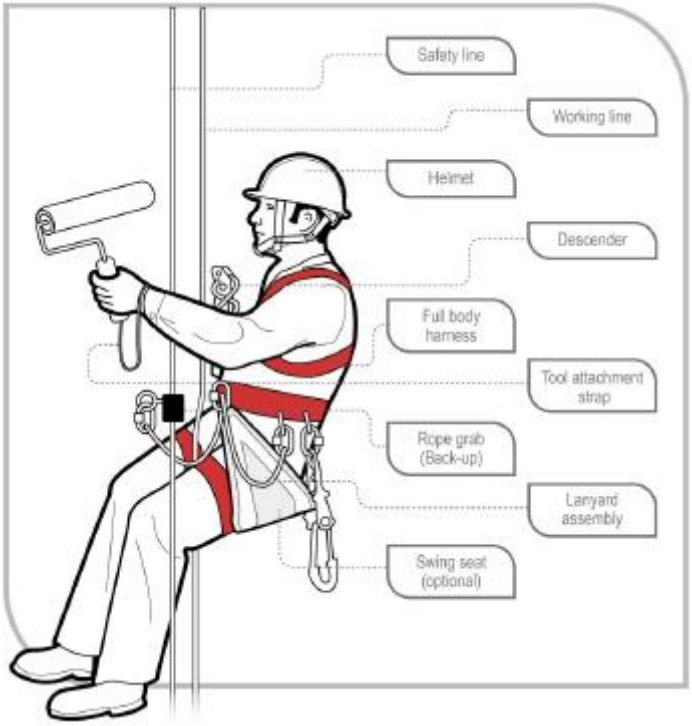

Figure 5 - Operator using an ascender in an industrial rope access system.

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

2.7. Fall Arrest Systems

Fall arrest systems, such as catch platforms, safety nets and individual fall arrest systems (including anchorage lines or rails), are intended to safely stop a worker falling an uncontrolled distance and reduce the impact of the fall. These systems must only be used if it is not reasonably practicable to use a fall

prevention device or work positioning system or if these higher level controls might not be fully effective in preventing a fall on their own.

1. Equipment used for individual fall arrest systems should be designed, manufactured, selected and used in compliance with *AS/NZS 1891(set)4 : Industrial fall-arrest systems and devices.*
2. Fall arrest equipment is selected, installed and used correctly.
3. Workers should be trained in the use of fall arrest equipment.
4. The equipment and anchorages must be designed, manufactured and installed to be capable of withstanding the force applied to them as a result of a person's fall.
5. The system must be designed and installed so that the person travels the shortest possible distance before having the fall stopped.
6. 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.
7. 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.
8. Persons using individual fall-arrest systems shall be trained in its safe use. They should complete the following training:

    d) In Australia, RIIWHS204D - Work safely at heights

    e) In New Zealand. US17600 Explain Safe Work Practices for Working at height or US25045 Employ Height Safety Equipment in the Workplace.
9. 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.
10. Harness-based fall arrest systems should be installed so that the maximum distance a person would free fall before the fall arrest system takes effect is 2 metres, although a lesser free fall distance is preferable. 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 work out whether there is enough distance available you should take into account:

    a) The worker's height.

    b) The height and position of the anchorage point.

c) The length of the lanyard.

d) Any slack in the horizontal lifeline.

e) Any stretching of the lanyard or horizontal lifeline when extended by a fall, and

f) The length of the energy absorber when extended by a fall.

11. 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.
12. Workers using a fall-arrest system shall wear adequate head protection to protect them in the event of a fall.
13. 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.
14. Snap hooks should be the double action type that requires at least two consecutive deliberate actions to open. Snap hooks should not be connected to each other as this could prevent the safe operation of the snap hook, for example roll-out may occur. Some double action hooks are susceptible to roll-out. Hex nut connectors may be appropriate for semipermanent connections. Further guidance is provided in AS/NZS 1891 Industrial fall-arrest systems and devices.
15. 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 7, in some circumstances, the equipment may not be effective in the event of a fall.
16. 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.

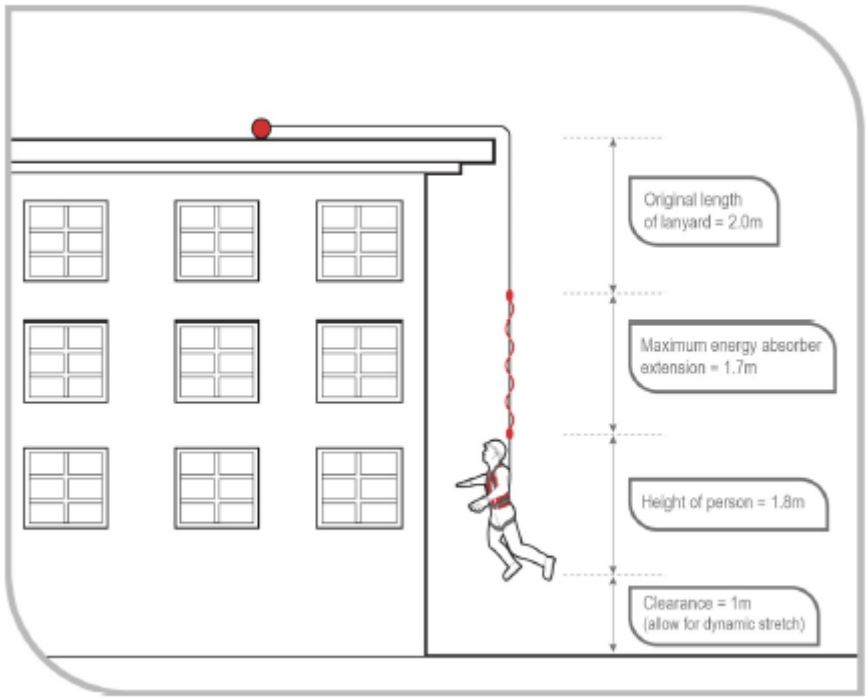

Figure 6 - Total fall distance before this particular configuration would be effective in arresting a fall is 6.5m

Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

2.8. Ladders

1. Fall protection is required for the use of portable ladders (including for access, and egress) where the height of climb exceeds 3m so that the person climbing has continuous fall protection by being attached to an AS1891 compliant system (see example in figure 8 below). An exemption is in place such that this requirement does not apply to access onto single story retail buildings only, e.g. this requirement for fall restraint does not apply to accessing the roof of a single-story Retail store but does apply to directly accessing Retail forecourt canopies.

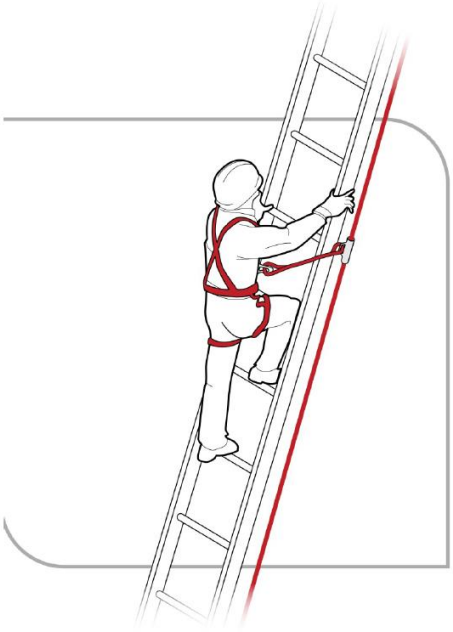

Figure 7 - Anchorage line system

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

2. 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. If the ladder does not have an inbuilt platform or safety rail, fall protection (i.e. fall restraint) is required when working from a ladder above 2 m.
3. Guidance on the selection, safe use and care of portable ladders is set out in *AS/NZS 1892 Portable ladders* series with the additional BP requirement that when the use of an extension ladder is the only means of access to complete the work, the extension ladders are limited to a maximum of 9m.
4. The manufacturer's recommendations on safe for the ladder use shall be followed.
5. 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.

6.

Figure 8 - A step platform can provide a stable work surface

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

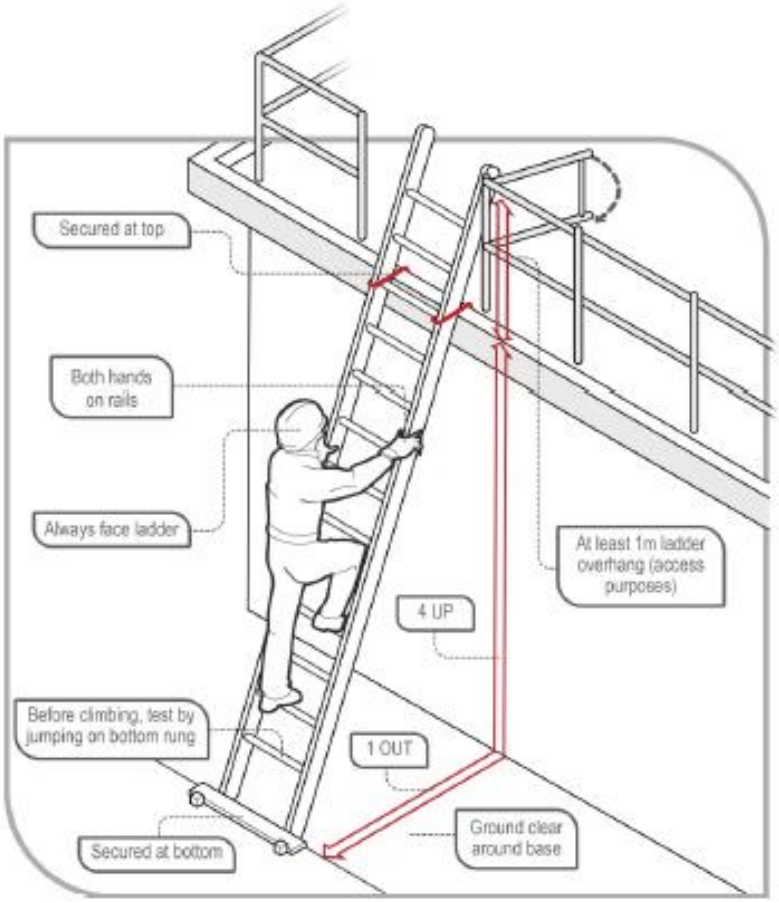

Figure 9 - Example of safe ladder use for climb height <3m or single-story Retail roof access

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

7. Before setting up a ladder, it should be inspected for visible damage or faults, for example broken rungs, stiles and footings. Faulty or damaged ladders must be removed from service.
8. When setting up a ladder you should check that:
    a) the ladder is the correct height for the work to avoid over-reaching or stretching.
    b) locking devices on the ladder are secure, and
    c) the ladder is not placed so that the weight of the ladder and any person using the ladder is supported by the rungs.
9. Ladders used at a workplace should be set up on a solid and stable surface, and to prevent the ladder from slipping. Single and extension ladders can be prevented from slipping by:
    a) ensuring the ladder has non-slip feet.
    b) placing ladders at a slope of 4:1 (the distance between the ladder base and the supporting structure should be about 1 metre for every 4 metres of working ladder height), and
    c) securing ladders at the top or bottom, or if necessary, at both ends.
10. Stepladders should be set up in the fully opened position and may require a second person to 'foot' the ladder for added stability.
11. When using a ladder:
    a) always maintain 'three points of contact' as follows:
        i) when going up or down a ladder, always have two feet and one hand, or one foot and two hands, on the ladder.
        ii) when working from a ladder, have two feet and one other point of contact with the ladder, such as a hand or thighs leaning against the ladder.
    b) use a tool belt or side pouch so that materials or tools are not carried in the hands while climbing the ladder.
    c) ensure only light duty work is carried out while on the ladder, where tools can be operated safely with one hand.
    d) make sure that no-one works underneath the ladder.
    e) do not allow anyone else on the ladder at the same time
    f) do not straddle the ladder, and
    g) wear slip-resistant footwear.
12. When using portable ladders it is **not safe** and is prohibited to:
    a) use metal or metal reinforced ladders when working on live electrical installations, or

b) carry out arc welding, oxy cutting or similar work.

13. Except where additional and appropriate fall protection equipment is used in conjunction with the ladder, workers **shall not**:

a) use a stepladder near the edge of an open floor, penetration or beside a railing,

b) over-reach—the centre of the torso should be within the ladder stiles throughout the work – use power or hand tools requiring two hands to operate, for example concrete cutting saws and circular saws,

c) 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, for example stillsons or pinch bars,

d) face away from the ladder when going up or down, or when working from it,

e) stand on a rung closer than 900 mm to the top of a single or extension ladder, or

f) stand higher than the second tread below the top plate of a stepladder with the exception of three-rung stepladders, unless working through an overhead opening of the building or structure that provides appropriate additional support above the ladder

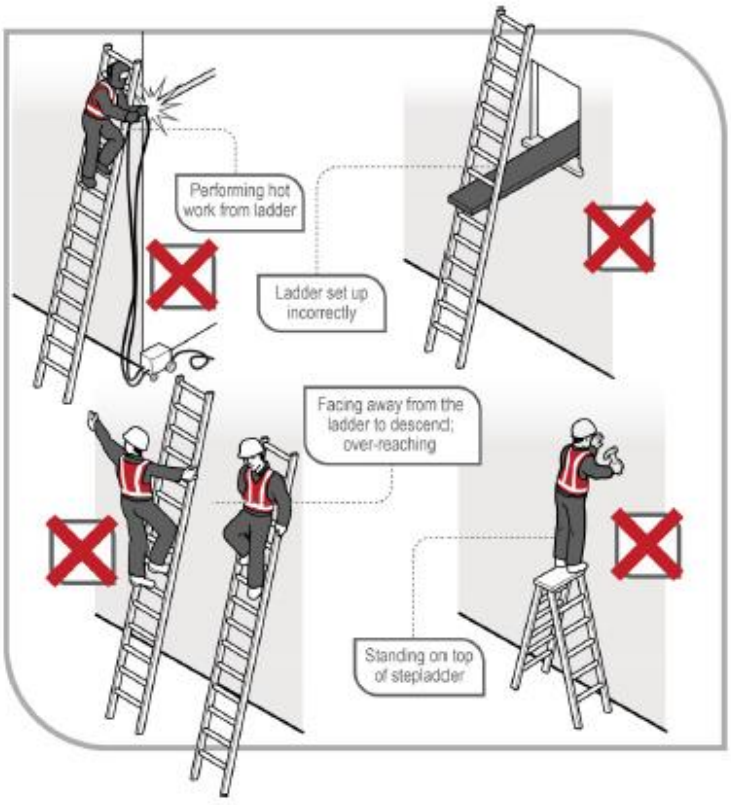

Figure 10 - Examples of unsafe ladder use

(Reference Safe Work Australia Code of Practice: Manage the risk of falls at workplaces, October 2018)

14. Ladder use in the following situations should only be carried out with additional safety precautions in place:

a) in access areas or doorways

b) if necessary, erect a barrier or lock the door shut

c) next to powerlines, unless the worker is trained and authorised and the correct ladder for the work is being used

d) in very wet or windy conditions, and

e) next to traffic areas, unless the working area is barricaded.

2.9. Emergency Procedures for Falls

1. 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.
2. 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.
3. Emergency procedures should take into account the following:

   a) **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.

   b) **Communication** methods to be employed during an emergency.

   c) **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.

   d) 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.

   e) Emergency procedures should be tested to demonstrate that they are effective.

   f) First aid. Consider the first aid equipment and facilities for the administration of first aid.

   g) 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.

3. Roles and Responsibilities

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

Table 1: Roles and Responsibilities

Planner	• The person planning the work at height is responsible for ensuring that the Permit Receiver or Work Clearance Issuer (as applicable) 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.
Work Clearance Issuer	• WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand) documents the responsibilities of the Permit Officer for all Work Clearances associated with Working at Height activities.
Permit Officer	• WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand) documents the responsibilities of the Permit Officer for all Work Permits associated with Working at Height activities.
Permit Receiver	• WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand) documents the responsibilities of the Permit Officer for all Work Permits associated with Working at Height activities.

4. Terms, Definitions and Abbreviations

Table 2: 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 lifeline.

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	Wherever it is possible for a person performing work to fall.

5. Verification Processes associate with this Procedure

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

6. 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
Group Defined Practice - Control of Work	GDP 4.5-0001
Permit to Work	PRO-4.5-0001-1-01

WPCG Work Authorisation	WPCG-PRO-01
Managing the risk of falls at workplaces	Safe Work Australia Model Code of Practice
Cranes (including Hoists and Winches) – Building Maintenance Units	AS 1418.13
Scaffolding series	AS/NZS 1576
Fixed platforms, walkways, stairways and ladders—Design, construction and installation	AS/NZS 1657
Industrial fall-arrest systems and devices—Harnesses and ancillary equipment	AS/NZS 1891.1
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
Industrial fall-arrest systems and devices—Fall-arrest devices	AS/NZS 1891.3
Industrial fall-arrest systems and devices—Selection, use and maintenance	AS/NZS 1891.4
Portable ladders series	AS/NZS 1892
Fibre ropes—Man-made fibre rope for static life rescue lines	AS/NZS 4142.3
Roof Safety mesh	AS/NZS 4389
Industrial rope access systems series	AS/NZS 4488
Industrial rope access systems—Selection, use and maintenance	AS/NZS 4488.2
Guidelines for scaffolding	AS/NZS 4576
Cranes—Safe Use—Mast climbing work platforms	AS 2550.16
Temporary edge protection series	AS/NZS 4994
MC&M Self Verification Procedure	PRO-8.2-0001-0-01

7. External References

This procedure was prepared with reference to relevant legislation/regulations including but not limited to, relevant Acts, Regulations, Aus/NZ Standards and industry codes and practices.
Details of current legislation/regulations can be provided by the HSSE Team on request.

8. 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
5	Adrian Connolly	Revised for the implementation of GDP 4.5-0002 Use of Temporary Ladders. Updated figure references from Safe Work Australia Code of Practice	10 Feb 2020	11685
6	Adrian Connolly	Update to insert additional requirements related to the lifting of personnel in workboxes in order to comply with BP Practice Lifting Operations D-P 3.2-0100.	17 Nov 2020	11723
7	Adrian Connolly	Minor update to implement IOGP Life Saving Rules, impact of changes to bp structure from reinvent, simplification and alignment to Safe Work Australia Code of Practice Managing the risk of falls at workplaces	4 Aug 2023	11836

9. Disclaimer

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