



Working at Heights

Power and Water Corporate Procedure

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1 Purpose

The purpose of this procedure is to define the requirements involved with fall prevention and outlines the requirements for a person using fall protection to control the risks of working at heights.

Approved by:	Prepared by:	Issue Date:	Status:
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		File No:	Version:
		F2007/5336	1

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2 Scope

This procedure will apply to all Power Water workplaces.

This procedure applies for any task where the risk assessment highlights a danger of injury from falling. In any case, fall prevention or protection shall be used for elevated work where one's feet are 2.0 metres above the measured surface.

It is applicable to all Power and Water employees and contractors who may have a requirement to work at heights at any Power and Water locations.

3 References

Australian Standards

AS/NZ 1891	Industrial Fall Arrest Systems and Devices
AS/NZ 1891.1	Industrial Safety Belts and Harnesses
AS/NZ 1891.2	Horizontal Lifelines and Rail Systems (Interim Standard)
AS/NZ 1891.3	Fall Arrest Devices
AS/NZ 1891.4	Industrial Fall Arrest Systems & Devices – Selection Use & Maintenance
AS/NZ 1576.1	Scaffolding – General requirements
AS/NZ 1576.2	Scaffolding – Couplers and Accessories
AS/NZ 1576.3	Scaffolding – Prefabricated, Tube and Coupler Scaffolding
AS/NZ 1576.4	Scaffolding – Suspended Scaffolding
AS/NZ 1657	Fixed Platforms, Walkways, Stairways & Ladders Design, Construction and Installation
AS/NZ 1892.1	Portable Ladders – Metal
AS/NZ 1892.2	Portable Ladders – Timber
AS/NZ 1892.5	Portable Ladders – Selection, safe use and care
AS/NZ 2550	Cranes Safe Use – Elevated Work Platform

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4 Roles and Responsibilities

Role / Title	Responsibility
Managing Director	<ul style="list-style-type: none"> • Ensures that safe work systems for the protection of falls and falling objects are implemented and maintained within all Business Units.
General Managers	<ul style="list-style-type: none"> • Ensure that information, instruction, training and supervision of all personnel is provided to enable them to perform their work in such a way that they are not exposed to the hazards of falling from height or falling objects. • Ensure that there is a system in place that ensures the design, construction, certification, maintenance and inspection of elevating work platforms, mobile work platforms and man cages and these are being controlled as per the relevant standard.
Managers	<ul style="list-style-type: none"> • Ensure that risk assessments are being conducted before the commencement of any work involving heights. • Ensure that all employees and contractors in their work areas have been trained and deemed competent prior to the commencement of work. • Ensure that all ladders, platforms and scaffolding in their area of responsibility conform to the relevant standard.
Supervisors/ Coordinators	<ul style="list-style-type: none"> • Ensure inspection of portable ladders, platforms and scaffolding in accordance with the relevant standard and inspection program. • In conjunction with Manager, ensure that all personnel are suitably trained prior to the commencement of work.
Designated Contract Officers	<ul style="list-style-type: none"> • Ensure that all work at heights risks have been identified and controlled for the contract prior to work commencing. • Ensure that all contractors are responsible for and comply in full with this procedure. • Ensure that all contractors are fully trained and are aware of their roles and responsibilities when working at heights. • Ensure that all fall protection equipment to be used by contractors have been maintained under the approved inspection regime.
Employees and Contractors	<ul style="list-style-type: none"> • Ensure that a risk assessment is conducted before the commencement of any work at heights. • Only perform working at heights if you have been trained in accordance with Power and Water procedures. • Use the correct equipment when working at heights. • Use all equipment only as per your training. • Dispose of equipment in such a way that no item is found in service until inspected by a competent external party. • Use only ladders that are in good condition. • Report any damaged ladders, platforms or scaffolding to their supervisor immediately.
Scaffolder	<ul style="list-style-type: none"> • Designs scaffold so that it will adequately support the anticipated load. • Inspects the individual scaffolding components before erecting. • Allows only authorised people to build the scaffold. • Uses portable ladders that are secured to access scaffold platforms.

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	<ul style="list-style-type: none">• Fits barriers and toe boards where applicable to working platforms that will give the same level of protection as permanent platforms.• Ensures that all scaffolding that has been constructed has been suitable approved and identified by the use of scaffold ID tags.
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5 Definitions

Where terms or words are not included in the definitions section, refer to Power and Water's Glossary for clarification. The glossary is available on Power and Water's intranet.

Word	Definition
Anchorage Point	A secure point on a structure to which a fall protection device may be secured (this includes static lines). Anchorage points shall be capable of withstanding a minimum force of 15kN (1500Kg) for fall arrest to 6kn (600kg) for fall restraint except on elevating work platforms where a suitable anchor point as per AS 2550 shall be fitted.
Barricades	Where overhead work is being conducted, barricades must be erected around the work area to protect others below from falling objects.
Dedicated Anchorage Point	An anchorage point that may not be used for any other purpose.
Elevating Work Platform	A telescoping device, scissor device, articulated device, crane attachment or any combination thereof used to position personnel, equipment and materials at work locations above or below the base support surface.
Free Fall Arrest	Is to provide persons with approved personal fall arrest harnesses with attachments, which will not prevent a fall but will minimise the risk of injury caused by the fall. Free fall arrest shall prevent a person from free falling more than 2.0 metres.
Fall Prevention	Creating a safe working area that eliminates the possibility of a fall or objects falling by using fixed working platforms, temporary working platforms, scaffolding and physical barriers.
Fall Protection	The use of industrial fall restraint/arrest equipment including full body harnesses, lanyards and attachment devices along with secure anchor points. Sometimes used to provide additional protection with some fall prevention measures, or where fall prevention is not practicable fall protection may be used. This includes the use of elevating work platforms and man lifts. Fall protection can be defined as either fall restraint or fall arrest.
Full body harness	An assembly of interconnected shoulder and leg straps.

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Often referred to as a parachute style harness.

Karabiner	A ring used for anchorage connection.
Lanyard	A lanyard is a device used to connect a safety harness to an anchor point. A shock-absorbing lanyard includes a device to reduce the load applied to the body to a maximum force of 6kN (600Kg).
Mobile Platform	A fabricated ladder and work platform construction that can be mobilised to different locations and provide safe access and egress to a work area at heights.
Restrained / Limited Fall Arrest	Is to provide persons with approved personal fall arrest harnesses with attachments for restraint or work positioning and used to limit a possible fall to less than 600mm.
Scaffold	A temporary construction that consists of a framework and an elevated working platform for supporting people and materials.
Suspension Trauma	A condition (following a fall), whereby a person suspended in a harness in a substantially upright position may experience blood pooling in the legs. Depending on the susceptibility of the individual, this may lead to loss of consciousness, renal failure and eventually death.
Toe Board	A raised edge on a platform that serves the purpose of stopping objects falling off the platform.
Total Fall Restraint	Is to provide persons with approved equipment designed to allow access to the work area with out reaching an area where there is a risk of falling.
Working at Heights	Accessing, egressing, ascending, descending or working in any position where a person can slip and/or fall from, into or through anything from one level to another. This also includes where objects could fall from one level to another.
Work Positioning	Is to provide persons with approved equipment designed to support them by means of industrial systems to complete tasks while minimising the risk of any fall.

6 Records

- 6.1 Business Unit shall store the current Business Unit Work at Heights Equipment register in EDMS. A link will be created from the legal compliance register to the EDMS trim file to demonstrate legal compliance.

7 GUIDELINES

This procedure applies to any task where the risk assessment highlights a danger of injury from falling. In any case, fall prevention or protection shall be used for elevated work where one's feet are 2.0 metres above the measured surface.

7.1 Risk Management

A risk assessment using a JSEA as a minimum shall be conducted before the commencement of any task or activity to determine if there is a potential of falling or being struck by falling objects. If such hazards are identified, then control measures shall be put in place based on the hierarchy of control to reduce the overall risk of working at heights to low.

- Elimination (eg. Do we need to expose people to height or falling objects?)
- Substitution (eg. Is there a safer way to do the task/activity?)
- Isolation – (eg. Handrails, platforms, scaffolding)
- Engineering – (eg. design specifications)
- Administration – (eg. Signage, training, procedures)
- Personal Protective Equipment – (eg. Fall restraint/arrest equipment)

When using the hierarchy of control to reduce the risk of working at heights, it is preferable to adopt controls that constitute fall prevention. This process allows a safer work environment when working at heights. If such controls are inappropriate for the nominated task, then the use of fall protection in the form of either fall restraint or fall arrest shall be implemented as a control measure.

7.2 Fall Prevention

Where practical, a safe working area shall be provided by means of work platforms or scaffolds.

Such constructions shall only be operated or erected by fully trained and competent personnel.

Portable ladders shall be used as a form of fall prevention provided that all identified risks have been assessed and suitable control measures put in place.

7.2.1 Scaffolding and Temporary Work Platforms

Work shall only be carried out utilising a complete scaffolding or temporary work platform, unless the work involves erection or dismantling of the scaffolding or work platform.

Scaffolding is provided with full floors, toe boards and guardrails.

All personnel involved in scaffolding and rigging work shall hold the appropriate certificate of competency in accordance with the National Occupational Health and Safety Certification Standard for Users and Operators of Industrial Equipment.

The area around erected scaffolding or work platforms shall be barricaded to prevent access from beneath, thus ensuring the risk from falling objects is low.

Scarf – tags (or similar) shall be used to identify scaffolding under construction or ready for use.

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Fall protection is not required provided the following criteria are met:

- An appropriate means of access and egress is provided that conforms to the relevant ladder requirements. Access and egress shall, where possible, not allow gaps to remain in the floor of the scaffold.
- If access to the scaffolding platform results in gaps in the flooring, such gaps shall be hard barricaded and be surrounded by toe boards to prevent people and/or equipment from falling.
- The occupant(s) of the scaffold shall not attempt to step out of the confines of the scaffold except by using the provided means of access or egress.

If any of these criteria are not met, then fall protection shall be utilised.

7.2.2 Portable Ladders

All portable ladders shall comply with the relevant Australian Standard, be fit for purpose, and have the correct rating for the person using the ladder.

Portable ladders may be used as fall prevention provided the following are adhered to:

- Portable ladders shall have non-slip devices fixed to the base of each ladder.
- The floor around the foot of each ladder shall be free from all obstacles.
- No person shall use the top rungs of a ladder that are less than 1 metre from the top of the ladder unless an approved working platform has been provided.
- A person may climb or descend a ladder without fall protection provided that they are able to use both hands and legs to do so and that they face the ladder and use one step at a time.
- Ladders shall be securely tied off or supported below at all times when in use.
- Ladders shall not be left unattended in a location that is readily accessible and frequented by the public.
- Only one person shall be on the ladder at any time.

Whilst on a ladder, the worker must maintain three points of contact at all times. Both feet are to remain on the ladder and the worker's upper body shall lean into the ladder whilst conducting work, unless a fall restraint device is in use.

Work is not to be performed on a portable ladder if the worker's body needs to extend beyond the boundaries either side of the ladder. If so, then alternative methods of fall prevention shall be identified.

If work is to be performed where a worker's feet are above 2.0 metres from a surface then it is deemed to be working at heights and additional fall protection shall be utilised.

7.2.3 Mobile Work Platforms

Mobile work platforms may be used to access work areas provided the following criteria are met:

- Mobile platforms should be constructed to the relevant standards and deemed suitable for the task at hand based on a risk assessment.
- Mobile platforms that are mounted on wheels shall have all wheels or travel device secured whilst the platform is in use.
- Mobile platforms should have handrails that extend the full length of the access/egress and work area.
- If work is to be carried out on the platform, then a safety chain shall be erected to restrict access to the ladder section of the platform whilst work is being performed.

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- Any steps on the mobile platform should have anti slip devices installed.
- The area around the mobile platform shall be free of obstructions and the floor clean and devoid of slippage.

When using a mobile platform to gain access to a work area, suitable controls must exist to reduce any work at height risks that may have been identified in the risk assessment for that work area.

7.3 Fall Protection

In all cases where adequate fall prevention is not available, fall protection shall be used. This includes situations in which work is being carried out from an elevating work platform or man-cage. Where an adequate work platform or fall protection is not available, work shall not proceed.

All personnel required to use fall protection shall be trained and deemed competent.

A person has Fall Protection if s/he is secured with an approved full body harness, fall restraint line, appropriate shock absorbing lanyard (where the potential to fall is greater than 4 meters), or short restraining lanyards (where the potential to fall is less than 4 meters) self-locking double acting hooks (or Karabiner type rings) and secure anchorage points.

Fall protection is using industrial fall restraint/arrest equipment subject to four (4) applications:

1. Total Fall Restraint
2. Work Positioning
3. Restrained/Limited Fall Arrest
4. Free Fall Arrest

7.3.1 Fall Protection Equipment

A competent person shall inspect all fall protection equipment used by PWC employees or contractors at a maximum of six-monthly intervals. Fall Protection Equipment used by PWC contractors shall be maintained on an approved register and made available on request to PWC representatives for their duration on site. Additionally, a competent person shall visually inspect any fall protection equipment before and after each use.

An approved register is such when it contains the following information as a minimum:

- Dates indicating that a regular program of inspections exists and that an inspection interval of no more than six months have been adhered to.
- Serial numbers or unique identification of relevant items is present on the register.
- Clear identification on the register that supplied equipment is fit for service.
- Recognition that equipment has been inspected by competent personnel.
- Methodology for identification of tested equipment and its correspondence with the register.

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At the beginning of each inspection period, the register shall be updated, any failed equipment destroyed and new equipment purchased as required by the responsible coordinator.

Fall protection equipment shall be made available to all employees that are required to utilise fall protection in controlling the risks of working at heights.

Fall protection equipment shall be stored in an appropriate, designated storage area containing instructions on care, fitting and maintenance of equipment. This includes personal lockers if such a person has been identified as being eligible for dedicated issue equipment.

Only fall protection equipment that is deemed suitable for the required task shall be used.

7.3.2 Use of Fall Protection Equipment

PWC employees shall use only equipment that has been inspected and deemed safe to use by a competent person and recorded in the Business Unit Work at Heights Equipment Register. Equipment used by contractors shall be maintained on an approved register and made available to PWC representatives on request for the duration of their time on site.

No person shall use fall protection equipment unless s/he has received the appropriate training detailed in this procedure, and has been assessed as competent and is using the appropriate equipment correctly as provided.

Any work that requires fall protection shall be conducted by a minimum of two fully trained and competent people.

A Rescue Plan shall be developed for all work at heights.

The Rescue Plan shall detail the steps to be taken by those involved in the work if a person or people become suspended in a harness or incapacitated in another way. All steps in the rescue plan shall be focused on rescuing a person from a their location in a timely fashion so as to avoid injury resulting from suspension trauma.

If insufficient steps are detailed in the rescue plan then the work shall not continue.

A minimum of one person shall be in the role of the safety observer and will not be working at heights but will oversee the task and initiate the steps of the Rescue Plan if the situation requires.

7.3.3 Disposal of Fall Protection Equipment

Fall protection equipment shall be disposed of in such a fashion that items are not used in service until checked by authorised personnel. Additionally, items shall be removed from service if it is deemed that they do not conform to any pre and/or post use checks, regular inspections, having been involved in a fall or have been dropped from a height of more than 1 metre.

NOTE: Under no circumstances shall equipment that has been identified as having failed an inspection be allowed back into service or to be stored in the same locations as "In Service" equipment.

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7.3.4 Elevating Work Platforms

The operator of the elevating work platform shall be trained and deemed competent to do so.

Elevating work platforms (including Scissor Lifts, Crane Workboxes, Forklift Workboxes and IT Attachments) shall not be used without additional fall protection in place during operation.

Elevating Work Platforms shall have complete toe boards fitted and all tools and equipment shall be secured in such a way that will prevent items from falling.

7.4 Anchor Points

Anchor points must, where practicable, be above the head of the worker and must ensure that in the event of a fall the worker will neither swing nor touch the ground.

Dedicated anchor points shall not be used unless a compliance plate has been attached immediately adjacent too it. These anchor points must not be used for any other lifting purposes.

All dedicated anchor points shall be tested and approved in accordance with the relevant Australian Standard.

Where no such dedicated anchor points exist, an engineered anchor point, (such as a structural beam), shall be used. Only personnel who have been trained and deemed competent in Power and Water's Work at Heights procedures shall be allowed to construct such anchor points.

Typically the following can be used as anchor points:

- Beams and hoist rails specifically rated for lifting (eg 'come-along' beams)
- Structural steel supporting beams (braces, cross members purlins etc)
- Points or brackets specifically designed for fall arrest devices to Australian Standards, and
- The primary hook of a fixed (non mobile) overhead crane may be used as an anchor point provided that the crane has been isolated correctly as per Power and Water's Low Voltage and Mechanical Isolation Procedure.

Points that shall NEVER be used for anchor points:

- Guard / mid or hand rails of walkways or stairways
- Structures that may become mobile (mobile scaffolds / trestles)
- Cable trays
- Grid or Tread Mesh on walkways
- Areas remote to mobile elevated working platforms (eg. anchoring outside the basket of a 'cherry picker' or 'boom lift' except when preparing to egress from the work platform provided such an action has been identified as the safest course in the JSEA or equivalent risk assessment)
- Portable ladders
- Steps on stairways

When creating an anchor point from beams and structural supports, approved and tagged slings shall be used in conjunction with karabiners as per work at heights training.

When attaching fall protection devices to an anchor point, double acting hooks or karabiners shall be attached directly.

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NOTE: When lanyards are to be used, they are NOT to be 'Choked Down' on themselves under any circumstances.

7.5 Emergency Response

Emergency Response plans involved in working at heights shall be tested at twelve (12) monthly intervals and involve all parties including (but not limited to) users of Work At Height equipment service workers, coordinators and managers.

Such tests shall cover the steps detailed in a rescue plan and the actions to be taken by those conducting the work.

7.6 Training

Power and Water shall provide approved training to all personnel that are required to use fall protection as per this procedure. Training will be completed every three years.

Only personnel that are deemed competent with the selected criteria shall be considered as having completed an approved training program for the use of fall protection.

7.7 Contractors Working at Heights

All contractors working for Power and Water who have a requirement to work at heights shall conform to this procedure.

The Designated Contract Officer shall ensure that all working at heights hazards have been identified and ranked according to risk using the risk assessment process for the tasks to be performed.

The Designated Contract Officer shall ensure that the most relevant control measures for working at heights hazards are utilised and that all contractors are aware of their roles and responsibilities in these controls.

The Designated Contract Officer for all categories of contractors shall ensure that appropriate equipment is made available and that all relevant parties are trained and deemed competent prior to the commencement of work.

7.8 Barricades

Where "overhead work" is being conducted, barricades shall be erected around an area below the work area to protect others below from falling objects.

7.9 Design and Construction

All equipment and construction referred to in this procedure must comply as a minimum with the relevant Regulations and Australian Standards (see References).