



# STANDARD WORKING AT HEIGHTS

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## 1 Purpose

This document describes the standards and procedures within Hunter Water Corporation (HWC) to effectively manage risks associated with working at Heights. It represents the HWC Workplace Health and Safety (WHS) Management System's commitment to compliance with the NSW WHS Act and WHS Regulation.

## 2 Objectives

The objectives of this standard are to ensure that all areas, functions, and work processes that may have a Working at Heights risk are effectively managed to ensure the health and safety of Hunter Water people, contractors, and the general public.

## 3 Scope

This Standard applies to all Hunter Water Business Units. This standard covers the requirements associated with Working at Heights within HWC.

## 4 Lifesavers

The Hunter Water Lifesavers are a set of minimum behaviours related to high-risk activities.



### Prevention of Falls

**I will always manage the risk of falls and protect others from dropped objects.**

- // Apply the hierarchy of control when planning for Work at Height:
  1. **Eliminate** via design and innovation
  2. **Substitute** use alternate materials and work methods
  3. **Isolate** fence or handrail. Consider passive fall protection for temporary tasks (barriers, bunting etc) >2m from edge for ground <15° slope
  4. **Fall protection**
    - Work positioning - scaffold, mobile elevated work platform
    - Restraint technique
      - restraint lines
    - Limited free fall arrest
      - inertia reels
    - Free fall arrest
      - shock absorbing lanyards
- // Harness lanyards must be attached to an anchor point or the restraint line
- // Permanent anchor points must be rated, inspected and tagged. Temporary anchor points i.e. structural beams / static lines must be assessed by a competent person
- // Create a controlled drop zone if there is risk of falling objects
- // Unattended fall zones must be protected using controls such as secure fencing and covers
- // Use portable ladders and building stairs safely:
  - Extension / single ladders - permitted for access, egress and short duration tasks maintaining 3 points of contact. Ladders must be set up at 4:1 angle and secured or footed by second person
  - Step ladders - never stand higher than second tread below top plate. Platform ladders are preferred
  - Electricians use non-conductive ladders for electrical work
  - Industrial ladders must be rated and never overloaded
  - On stairs, hold handrails and do not carry heavy or awkward objects



## 5 Roles and Responsibilities

Roles and Responsibilities can be located in the [WHSMS Manual](#).

Individual guidance booklets are in the Responsibility, Accountability, and Authority Manual [HW2021-534](#).

## 6 General Requirements

### 6.1 General requirements for working at heights

All PCBUs must have procedures to ensure that the risks involved with working at heights are managed to ensure work can be performed safely.

Fall prevention equipment must be used where there is the potential to fall from one level to another. However, harnesses and fall arrest devices should always be the last line of protection. Handrails, barriers, covers, scaffolding, elevated work platforms, etc., must be used as the primary protection whenever practicable.

Supervisors must ensure that all workers working at heights are qualified and competent and that all equipment is in working order and has been inspected.

All workers who are required to work at height, including working above pits and wells, must ensure that a risk assessment has been carried out and appropriate risk control measures are in place before the commencement of the work task.

Workers must be competent in selecting and using fall-prevention equipment when required to work at height. Fall prevention equipment must be checked before use to ensure that the tag is in date and that there are no visible faults.

A rescue plan must be developed and understood by all workers involved whenever fall arrest systems are in use.

Suitable protection must be in place to ensure workers or others do not access the area below where work is being carried out.

No elevated structure will be accessed unless appropriate fall-prevention measures are in place. Fall prevention measures could include:

- Scaffolding
- Fixed work platform
- Scissor lift
- EWP
- Workboxes
- Handrails
- Platform ladder
- Safety harness, fall restraint or arrest device and lanyard

## 7 Key Elements – Managing the Risks Associated with Working at Heights

### 7.1 Procedure

Workers shall be protected from falls by implementing risk-based controls by legislative requirements following the hierarchy of controls. Many work activities undertaken at HWC workplaces have the potential to expose workers to falls unless appropriate risk controls are applied. These could include:

- working on reservoirs, roofs, and elevated platforms



- working on dam assets and weirs
- working around holes and openings such as pump station pits and working on steep embankments
- Excavations
- removing grid mesh flooring panels
- constructing or using scaffolds
- construction of infrastructure
- working on large mobile equipment
- using ladders
- accessing utility and truck trays and trailers

## 7.2 Risk Assessment

A Pre-task risk assessment (PTRA) must be completed for any work activity that exposes a worker to the risk of falling. All risk assessments must be undertaken in accordance with the WHS Hazard Identification and Risk Management Procedure.

When undertaking the risk assessment, the following must be considered:

- All potential fall hazards (workers, tools, materials, etc.)
- The frequency and duration of exposure to the hazard
- The consequence of a fall
- Environmental conditions that may influence the work activity (i.e., wind, rain, temperature, etc.)
- Legislative requirements
- Controls that can eliminate or mitigate the hazard in accordance with the hierarchy of controls
- Recommended or standard practices applied to similar circumstances at other HWC workplaces
- Practicability of the available risk controls
- Hazard reduction benefits, impacts, and costs of available controls.

## 7.3 Selection of fall risk controls

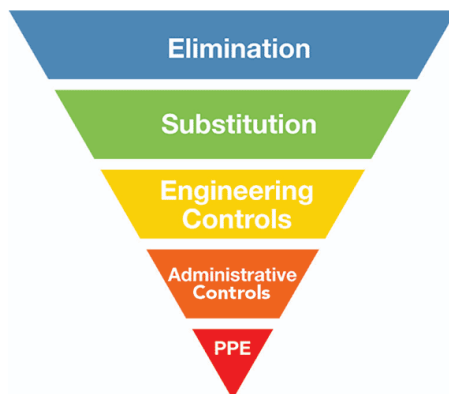
1. Elimination
2. Substitution
3. Isolation
4. Fall Protection
  - Work Positioning – scaffold, mobile evaluated work platforms
  - Restraint technique – restraint lines
  - Limited Free Fall Arrest – inertia reels
  - Free Fall Arrest – shock-absorbing lanyards
  - (Free fall is the last and least preferred option – requires permit approval)

The following hierarchy of control approach applies:

- **Elimination** – Eliminate the need to access the fall-risk area, e.g., by locating or relocating items requiring inspection, maintenance, or other attention elsewhere.
- **Substitution** – Provide alternative means of access to the point or item to which access must be made, which avoids the risk of a fall, e.g., walkways.

- **Isolation** – Barricade or enclose the fall risk so that it cannot be reached hand bunting, handrail scaffolding
- Fall protection (refer above)

**Note:** A control may be implemented only if it is not reasonably practicable to implement a higher level of control.



## 7.4 Eliminating the need to work at height

Where possible, the requirement to undertake work at height should be eliminated. Working at height can be eliminated by either undertaking the work at ground level or from a solid construction.

### Performing work at ground level

Performing work at ground level is not only the safest option but is often quicker and more accessible, too; for example:

- Using extended spindles to operate valves in deep valve pits
- Lowering light poles to perform maintenance on light fittings
- Assembly and maintenance of plant and equipment at ground level before lifting or lowering into regular positions

Alternate work methods may also be used to eliminate the need to work at height, including:

- Using flexible cameras to inspect equipment in deep pits
- Using drones to perform inspections of reservoir roofs
- Using remote-controlled equipment to perform tasks in dangerous locations.

### Performing work on a solid construction

Working on a solid construction provides an environment where the likelihood of a fall can be eliminated. Solid construction means an area that has:

- A surface that is structurally capable of supporting all persons and things that may be located or placed on it
- Barriers around its perimeter and any openings to prevent a fall
- An even and readily negotiable surface and gradient
- A safe means of entry and exit

### Examples

- A fixed platform surrounding an air valve on an elevated water main
- A fixed platform to maintain an elevated conveyor
- A fixed platform to access weir gauging station assets



## 7.5 Safe access to work areas

Safe access arrangements must be implemented where work activities that expose workers to the risk of falls from height are being undertaken.

The preferred method of access, in priority order, is:

- Level walkway
- Sloping walkway
- Stairway
- Fixed inclined ladder (must comply with AS1657-1992)
- Fixed vertical ladder (consider vertical lifeline)
- Portable ladder

The appropriate access method for a specific work area will depend on the configuration of the work area and the work to be undertaken. Wherever practicable, the process of access that provides the highest level of protection must be used.

The following considerations should be addressed when selecting access methods:

- Exposure of access systems to the weather (e.g., rain can make surfaces slippery, and strong winds can cause loss of hand grip)
- The provision of adequate natural or artificial lighting
- The clearance of obstructions so that workers can move easily to and from the workplace.

Where none of the access methods listed above are practicable, an alternate access and egress method, such as an industrial rope or davit system, may be required.

## 7.6 Edge protection

Edge protection is a barrier that prevents a worker from accessing an open edge with a risk of a fall. Edge protection is a key component of fall prevention and is applied extensively throughout HWC workplaces.

Edge protection may be permanent, such as a permanent handrail around a working platform on a tank, or temporary, such as scaffolding or a portable barrier system.

Edge protection has specific design requirements that must be considered for all new assets or alterations to existing assets.

### Handrails

Handrails usually consist of a top rail, a mid rail, and a toe board. However, infill panels may also be used in place of the mid-rail.

A handrail shall be provided on relevant parts of solid construction, including the perimeter of buildings and other structures, mezzanine floors, floor openings, and the open edges of stairs, landings, platforms, or shaft openings.

Where a fall hazard exists at the entry points to an asset (e.g. reservoir roofs or wet wells), a handrail shall be provided for a minimum distance of two metres on each side of the entry point.

Handrails around hatches and similar openings shall fully surround the opening (except for the access point, which can be closed – i.e., with a chain or self-closing gate).

At all new installations, where assets are being upgraded or where a high risk is identified, a self-closing gate shall be installed as part of a handrail at the entry point to a work area with a fall risk. The gate shall be installed:

- opening inwards at the point of entry to a roof or platform
- opening outwards at the entry point to a barrier around a wet-well, hatch, pit, or similar opening.



Maintenance or modifications to Handrails must not be undertaken unless assessed and approved by a suitably qualified engineer.

#### Portable Barriers

Portable barriers may provide temporary edge protection where installation of a permanent Handrail is not practicable.

Portable barriers must comply with the requirements of the AS/NZS 4994 Temporary Edge Protection series of standards and must be installed by appropriately trained workers.

Where portable barriers are installed to undertake a work activity near an unprotected edge, the workers installing the barriers must be protected from falling by a fall restraint system.

Where portable barriers are being installed to undertake a work activity in a work area where an unprotected edge will be created as part of the work (i.e., the removal of a pit lid), where practicable, the portable barrier must be installed before the unprotected edge being created (i.e., before the pit lid is removed).

Where a routine work activity that requires workers to use portable barriers is undertaken, an assessment should be conducted to determine if permanent handrails should be installed.

### **7.7 Asset improvements to eliminate work at height**

When a routine work activity requires workers to work at height, an assessment should be undertaken to determine if asset modifications can be made or if work methods can be changed to remove the need to work at height.

Workers should raise any safety improvements that will eliminate the need to work at height with their line supervisor or WHS Advisor.

### **7.8 Passive fall protection**

Where working at height cannot be avoided, risk controls must be implemented to prevent falls from occurring. Working more than 2 meters from an unprotected edge will only be considered on structures at an angle of less than 15° above the horizontal, where gravity will not push you toward the unprotected edge.

### **7.9 Temporary work platforms**

Work platforms are designed to prevent workers from falling. Temporary work platforms include scaffolds, elevated work platforms, workboxes, step platforms, or any other temporary platform that provides a working area designed to prevent falls.

Where a temporary work platform does not adequately control the risks of undertaking work at height, a fall restraint system or a fall arrest system shall be used in conjunction with the work platform.

Specific types of temporary work platforms and their associated requirements for using them at HWC workplaces are identified in the following sections.

#### Scaffolding

- Scaffolding is defined as a temporary structure specifically erected to support working or access platforms, and the erection and dismantling of scaffolding must be carried out in compliance with the AS/NZS 1576.1:2010 Scaffolding – General Requirements and AS 4576:2020 - Guidelines for scaffolding
- Evidence of such compliance should be obtained in the form of documentation pertaining to the scaffold system and a competent person's statement about the scaffolding erected at the workplace. All employees or contractors erecting or dismantling scaffolding must hold an appropriate certificate of competency by national licensing requirements.
- At Hunter Water sites, all scaffold, including that less than 4m in height, shall be installed by personnel with scaffold certificate of competency.
- Clause 225 of the WHS Regulation 2017 requires that the scaffold from which a person could fall more than four metres and its supporting structure be inspected by a competent person:



- Before use of the scaffold is resumed after an incident occurs that may reasonably be expected to affect the stability of the scaffold; and
  - Before use of the scaffold is resumed after repairs; and
  - At least 30 days
- If an inspection of a scaffold or its supporting structure indicates an unsafe condition, following any repairs, alterations, and additions' the scaffold and its supporting structures are reinspected by a competent person before the scaffold is used.
- There must be safe access to the scaffold platform, and ladder access shall be located at a slope of 4:1 within the outermost boundary of the scaffold structure.
- Each working platform and access platform must have full edge protection comprising a handrail, mid-rail, and toe-board or a handrail and infill panel.
- If the scaffold is incomplete and left unattended, there must be appropriate controls to prevent unauthorised access, including no road barrier tape at access points, information tags and warning signs.
- In addition to the requirements of the WHS Regulation, the following measures should also be considered as a means of controlling risk:
  - All scaffolding will be erected or supervised by an accredited person. Where tube and coupler scaffolding is used, such person shall be at least an Intermediate level competent Scaffolders.
  - All scaffolds will have top rails, mid rails, and toe boards secured and fitted. Mesh panels may replace the mid rail and toe board.
  - All scaffolds are to plan the working platform, providing a complete floor fully.
  - All scaffolds, before being commissioned, shall be inspected by a competent person and have a Scaffolding Tag (Scafftag) attached to identify that the scaffold complies.
  - All scaffold external access ladders shall extend 900mm past their uppermost resting point and be secured.
  - Access through an internal ladder is to be provided to all scaffolds and work platforms over 2m and be used as such; climbing on scaffold standards is not permitted.
  - All scaffolds not in commission will have the appropriate Scafftag applied and be barricaded to prevent access.
  - All scaffolds will be inspected at intervals not exceeding 30 days, and the Scafftag information will be updated.
  - Tools and equipment shall not be left loose on scaffolds.
  - The scaffold should be checked for alterations or removal of planks, toe boards, and guardrails before use.
  - The scaffold should be stable and, if necessary, secured to the building or structure in enough places to prevent collapse.
  - The scaffold should be checked for clearance from nearby powerlines before erection.
  - Where scaffolding is used to protect against falls at the perimeter of a building, the scaffolding should be as close to the eaves as possible but no lower than 500mm beneath the roof's edge. This may require lifting the working level or installing an intermediate hop-up platform between the working platform and the roof's edge.
  - Inclement weather - Where a change in environmental conditions is noticed, scaffolding will be re-inspected before use.



### Mobile scaffolding

Mobile scaffolding shall be used:

- where it is not practicable or logical to use fixed scaffolding
- where there is a requirement for regular movement of the working platform
- where the supporting surfaces are hard and level
- as determined by a risk assessment

Where work is performed using mobile scaffolds, workers must be trained on the use of the mobile scaffold and understand that:

- the scaffold must remain level at all times
- the scaffold must be kept well clear of powerlines, open floor edges, and penetrations
- the scaffold must not be accessed until the castors are locked to prevent movement
- the scaffold must never be moved while anyone is on it
- the scaffold must only be accessed using internal ladders
- mobile scaffold wheel locks should be engaged before people work from the scaffold
- persons shall vacate a mobile scaffold before the scaffold is moved
- the path of travel of a mobile scaffold should be checked for mobile equipment, electrical, and other hazards, such as excavations before it is moved

### Mobile elevated work platforms

Mobile Elevated Work Platforms (MEWPs) include scissor lifts, cherry pickers, and boom lifts. Some are designed for hard, flat surfaces only, while others are designed to be operated on rough terrain.

Cherry pickers and boom-type lifts require all persons in the basket to wear a safety harness and be attached to the designated fall protection anchor point at all times.

Scissor lifts generally do not require persons in the basket to wear a safety harness as the orientation of the basket is fixed. If the scissor lift has a designated fall protection anchor point installed, the persons in the basket may wear a harness and be attached to the anchor point.

A designated person must always be in control of the MEWP or Scissor-lift. The person must be trained, competent, and appointed to operate the MEWP or Scissor-lift. The emergency standby person must have the same training, competence, and appointment level as the plant operator.

The following are the requirements for selecting and operating a MEWP at HWC workplaces:

- The manufacturer's or supplier's instructions are consulted for information on safe operation.
- Workers operating the MEWP are trained and instructed in safe operating procedures for the particular model and type of equipment.
- The training must include the safe use of fall arrest equipment and emergency rescue procedures. All workers in the MEWP shall have appropriate working-at-height qualifications
- All persons working in or on MEWP's above two (2) metres must wear safety harnesses with lanyards attached that are affixed to an approved anchor point and processes must be developed, implemented and maintained to prevent tools and equipment from falling
- Workers must be licensed when operating boom-type elevated work platforms with a boom length of 11 metres or more
- Under no circumstances shall the safe working load (SWL) be exceeded, and no MEWP will be used as a crane



- The MEWP is only used as a working platform and not as a means of entering and exiting a work area unless the conditions defined in AS 2550.10 Cranes, hoists, and winches - Safe use - Mobile elevating work platforms are met
- The operator is responsible for ensuring that the pre-start safety check is done and approved safety and rescue equipment is fitted
- Unless designed for rough terrain, the MEWP must only be used on a solid-level surface
- The ground surface in the direction of travel must be checked to ensure no penetrations or obstructions could cause uncontrolled movement or overturning of the MEWP

### Workboxes

A workbox is designed to be supported by a crane, hoist, forklift, or other mechanical device to provide an elevated work area for persons working from the box.

A workbox consists of a platform surrounded by an edge protection system and shall be designed in accordance with AS 1418.17 Cranes (including hoists and winches) – Design and construction of workboxes.

Where reasonably practicable, other working platforms, such as a scaffold or an EWP, should be used as an alternative to a workbox.

The following are the requirements for selecting and operating a workbox at an HWC workplace:

- The workbox is designed for the task and securely attached to the mechanical lifting device. A competent person should check the workbox, lifting attachments, and inspection records before use.
- The workbox must 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 must be attached to the anchorage by a lanyard and harness unless the workbox is fully enclosed.
- Workers must remain within the workbox while being lifted or suspended.
- Workers must never enter or leave the workbox when it is suspended (except in an emergency).
- No other devices (e.g., ladders) will be used to gain additional height in the workbox.
- The workbox must not be suspended over other workers at any time.
- The mechanical lifting device must be fitted with the means to safely lower the workbox in an emergency or a power supply failure.
- The mechanical lifting device is suitably stabilised at all times while the workbox is used.

## 7.10 Fall systems

### Fall restraint systems

A fall restraint system controls a person's movement by attaching the person to an approved anchor point, which physically minimises the possibility of the person reaching a position with a fall risk.

When working in Fall Restraint, the worker must use a rated fall arrest device attached to an approved fall arrest anchor point.

When a fall restraint system is used, the person(s) working at height do not need to complete the Working at Height permit and do not need their supervisor's permission. They do require a Rescue Plan and a Standby person.

Fall restraint systems should only be used if they are not reasonably practicable to prevent falls by providing a physical barrier (e.g., a guard rail). This is because restraint techniques require a high level of user skill and greater supervision to operate safely.

A competent person must install a fall restraint system in accordance with the manufacturer's instructions. Restraint anchorage should be designed for fall-arrest loading.



When selecting and using a fall restraint system, the following shall be considered:

- The correct selection, installation, and use of the equipment.
- That the system is designed and installed so that the person cannot reach a position from which they can fall.
- That the equipment and anchorages are designed, manufactured, and installed to withstand the force applied to them due to a person's fall.
- That the equipment has been inspected and has a current inspection tag fitted (where required).
- Make sure that workers using a fall restraint system wear adequate head protection to protect them in the event of a fall.
- Where the work method requires persons to detach and re-attach from a fall restraint device while at height, a dual lanyard system shall be utilised to ensure that at least one connection point is maintained at all times.
- No person may wear a harness or use any other fall restraint device unless trained in their safe use.

#### Fall arrest system

A fall arrest system is intended to safely stop a worker from falling at an uncontrolled distance and reduce the impact of the fall. Fall arrest systems **DO NOT** prevent falls; they are designed to arrest a fall.

There are three types of fall arrest equipment:

- **Type 1 device** - (includes rope & rail grabs and shock-absorbing lanyards)
- **Type 2 device** - (also known as fall-arrester, inertia reel, self-retracting lifeline)
- **Type 3 device** - (similar to the Type 2 device with the addition of a winching mechanism)

When a fall arrest system is used, the person(s) working at height must complete the Working at Height permit and obtain permission from their supervisor. They also require a Rescue Plan and a Standby person.

A competent person must install a fall arrest system in accordance with the manufacturer's instructions.

Situations where fall arrest systems must be used include:

- working outside a guard railing or in an area with no railing (e.g., a roof, on beams, etc.)
- working in an EWP, workbox, or similar

Key safety considerations in using fall arrest systems include:

- the correct selection, installation, and use of the equipment
- that the equipment and anchorages are designed, manufactured, and installed to be capable of withstanding the force applied to them as a result of a person's fall
- that workers wear adequate head protection to protect them in the event of a fall
- workers should not use a fall-arrest system unless at least one other person on the site can rescue them if they fall

Where the work method requires persons to detach and re-attach from a fall arrest device while at height, a dual lanyard system shall be utilised to ensure that at least one connection point is maintained at all times

No person will wear a harness or any other fall arresting device unless trained in their safe use

ALL WORKS CONDUCTED UNDER FALL ARREST SYSTEMS REQUIRE A [FALL ARREST PERMIT](#) TO BE COMPLETED



## 7.11 Portable ladders

Portable extensions or single ladders should generally only be used to access or from a work area.

It is recommended that portable ladders are not used as a work platform where it is reasonably practical to use an alternative method (i.e., elevated work platform, scaffold, platform ladder, etc.).

Portable ladders may be used as a working platform where:

- the work activity can be conducted safely using one hand while maintaining three points of contact with the ladder.
- The work can be safely carried out from the ladder (i.e., does not involve heavy equipment or a high degree of leverage force)
- The work activity is of a short duration

### Safe Use of Ladders

When a ladder is used at a HWC workplace, the following must be considered:

- All ladders/stepladders shall be of an industrial rating, compliant with AS 1892 (set), with ladders having a minimum WLL of 120kg.
- All portable ladders shall be inspected by the user for deterioration and faults before each use. Defective ladders shall be removed from service.
- All ladders are to be inspected for any defect or deterioration before use.
- Where electrical work is carried out, or overhead powerlines are located in the vicinity of the work activity, only insulated or non-conductive ladders are to be used. Metal or wire-bound ladders must not be used near power lines.
- A ladder should not be “walked” by the person standing on the ladder.
- Only one person is permitted to be on a ladder at a time with three body limbs on the ladder at all times.
- Climb and descend facing the ladder, maintaining three points of contact with the hands gripping the stiles or each rung. When going up or down a ladder, always have two feet and one hand, or one foot and two hands, on the ladder
- Personnel are not to carry anything in their hands that prevents three points of contact when climbing or descending.
- Long and heavy ladders (greater than 20kg) should be handled by at least two people.
- Wear slip-resistant footwear when using ladders. Clean off footwear and ladder rungs before using the ladder.
- Ladders are to be stored securely, vertically or horizontally, in designated locations, and protected from the weather.
- Ladders are to be maintained in good condition, clean, and free from splinters.
- Rung and tread joints shall be tight, and fittings shall be securely attached.
- Pulleys, where fitted, will be lubricated and all moving parts will operate freely without bending or play.
- A ladder with damaged, split, loose, or otherwise defective components will not be used and will be tagged “Out of Service.” Any fault is to be immediately reported to the Supervisor.
- If tools are necessary to carry out the work, they should be restricted to light hand tools that can be carried on a tool belt, holster, or pouch at all times; during the ascent, work, and descent, the person must be capable of retaining three points of contact with the ladder.
- Any work from a ladder must be conducted so that the centre of gravity is always contained within the load-bearing position of the ladder.



- If a person is to work from a ladder, the first choice is to use a Platform Ladder. If that is not possible, then a fall restraint or fall arrest device should be used unless three points of contact can be maintained and the task does not require overreaching. When working from a ladder, the three points of contact are two feet and one other point of contact with the ladder, such as a hand or thighs leaning against the ladder.
- Ladders must be set at an angle of four (up) to one (out)
- Extension Ladders must be footed, held, or otherwise secured (e.g., held firmly by another person) to prevent slipping. The ties should be attached to the stiles of the ladder and not the rungs.
- A person may climb or descend a ladder without fall protection provided they can use both hands and legs and maintain three points of contact; they continue to face the ladder and only step, one rung at a time.
- Ladders should be secured against movement.
- Metal ladders must not be used in or near electrical cabling, circuitry, or electrical installation.
- Electrical work of any description can only occur from an appropriately approved ladder. (i.e. Fibre Glass)
- Any equipment to be carried to the task must be secured to a belt or hoisted separately.
- Any ladder work conducted in a pedestrian or vehicular thoroughfare must be cordoned off by barriers and signed.
- Ladder must extend 1 metre above top rest position. Only approved attachments are to be used.

## 7.12 Anchorage points

### Permanent anchorage points

Each permanent anchorage point used for fall restraint or fall arrest systems should comply with the requirements in *AS/NZS 1891:4 Industrial fall-arrest systems and devices – selection, use, and maintenance*.

Each permanent anchorage point must be:

- installed by the instructions of the manufacturer or supplier. If no instructions are available, the advice of an engineer or competent person must be sought
- inspected and approved by a competent person before the anchorage point is first used
- inspected and tested in accordance with regulatory and manufacturer requirements.
- located so that a lanyard can be attached to it before a person(s) moves into a position where they could fall
- the load rating needs to be displayed on the anchor point

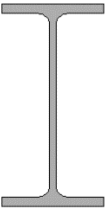
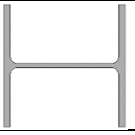



Damaged anchorages or anchorages overdue for inspection must not be used, and an out-of-service tag must be attached. The anchorage must not be used until it is repaired, inspected, and tested by a competent person.

### Temporary anchorage points

- Temporary anchorages may be established for infrequent work where it is impractical to provide a permanent anchorage. Alternate work activity undertaking methods must be evaluated before a temporary anchorage is established. There are two types of temporary anchor points:
  - **Structural** – A section of an existing structure that the user identifies as able to withstand the required load.
  - **Supplied** – A proprietary anchorage system supplied by a manufacturer – e.g., a Temporary static line



- Temporary anchorages must be established and used by appropriately trained and competent workers and in accordance with manufacturers' instructions (where available).
- Temporary anchorages must have a minimum ultimate tensile strength of 15kN (~1500kg) for a single-person anchorage or 21kN (~2100kg) for a double-person anchorage.
- Slings, ropes, and webbing shall be protected when abrasions or cutting could lead to failure.
- Where there is a doubt regarding the suitability of the temporary anchorage, the anchorage must not be used until a suitably qualified engineer assesses it.

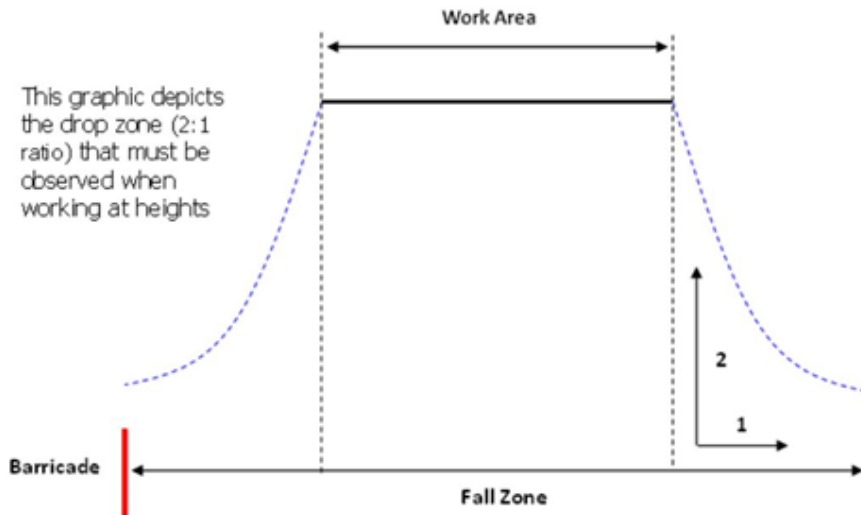
Fall Arrest Anchor Point – Minimum Beam Size for Single Person		
Beam Type	Minimum Size (mm)	Maximum Beam Span in Meters
Standard UB		
	100	3
	180	4
	200	5
	250	7
	310	8
Standard UC		
	100	2.5
	150	4
	200	6
PFC Channel		
	150	3
	180	4
	250	6
	300	8
Equal Angle		
	100	3
	125 x 12	4
	125 x 16	5
	150 x 12	6
	150 x 16	8
Unequal Angle		
	125 x 75 x 8	3
	150 x 90 x 12	4

### 7.13 Exclusion zones

- Where overhead work is to be performed, and there is a risk of equipment, materials, or tools falling from the elevated position, a drop zone must be established below the elevated position.
- The risk of falling objects must be clearly defined within the working at heights risk assessment.
- WHS Regulation specifies particular risk control measures for controlling the risks associated with objects falling from heights. It requires:
  - A safe means of raising and lowering plants, materials, and debris in the place of work.
  - A secure physical barrier to be provided to prevent objects from falling freely from buildings or structures in or near the workplace.



- Where it is impossible to provide such a barrier, the provision of measures to arrest the fall of objects.
- Personal protective equipment to minimise the risks associated with falling objects.
- Provide a screen or an overhead protective structure that catches falling objects. The establishment of a no-go zone with the necessary barrier to protect persons.
- 



- A striped tape barrier (or similar) may need to be erected to surround the drop zone with a sign on each side displaying “CAUTION – OVERHEAD WORK – KEEP CLEAR” or similar.

## 7.14 Reviewing risk controls

Once implemented, risk controls for managing fall risks must be reviewed to ensure they remain effective.

Existing risk controls for managing fall risks must be reviewed:

- if an injury or incident is reported
- when the risk control measure does not control the risk so far as is reasonably practicable
- before a change at the workplace that is likely to give rise to a new or different risk to health or safety that the control measure may not effectively manage
- if a new relevant hazard or risk is identified
- if the results of the consultation indicate that a review is necessary

## 7.15 Inspection, maintenance, and storage of fall protection system equipment

### Equipment user inspections

When working at height, the inspection of safety equipment by workers using the equipment is critical as workers' lives depend upon the continued efficiency and durability of the equipment. A proper inspection at each time of use is the first line of defence against hazard associated with faulty equipment.

The following items shall be subjected to inspection by the worker using safety equipment before and after each use to ensure that it is in a serviceable condition:

- **personal equipment** – harnesses, lanyards, connectors, and fall-arrest devices
- **everyday use equipment** – ropes, slings, fall-arrest devices, and mobile attachment devices.

The inspection shall be by both sight and touch and include checking the test tag (to ensure that the equipment is in test). This requirement consists of the opening or removal of temporary rope or line



protectors to enable the rope to be properly inspected. The operation of the locking mechanism on fall-arrest devices must also be checked.

Training and assessing workers performing work at height shall include competency in carrying out the inspections specified in this section.

#### Regular scheduled periodic inspections

An appropriately trained and qualified inspector shall conduct the inspection and servicing of safety equipment used for working at height per the requirements of *AS/NZS 1891.4 Industrial fall arrest systems and devices – Selection, use, and maintenance*. Note: a worker trained to perform work at height is not necessarily qualified to perform periodic inspections on the safety equipment.

If any signs of wear or weakness are found during the inspection, the equipment must be withdrawn from use until they are repaired. An out-of-service tag must be affixed to the equipment to identify the condition or defect.

Inspection records for safety equipment used for working at height must be maintained for the life of the item of equipment.

## 7.16 Emergency procedures

Emergencies involving falls must be managed in accordance with the WHS Emergency Preparedness and Response Procedure and the relevant workplace's Emergency Response Plan.

For work activities involving a worker using a harness, the rescue plan must ensure a worker can be safely removed from the harness within five minutes of sustaining a fall. This is to ensure the worker does not suffer the effects of suspension trauma due to being suspended in the harness. The safety plan must also detail how to safely extract a fallen worker from the work location if a fall occurs.

All workers involved in work at height must be provided with appropriate information, instruction, and training about emergency procedures. For fall arrest systems, the training about emergency procedures should:

- include training workers to recognise the risks of suspension trauma.
- Include training workers to implement rescue procedures, including training workers to act quickly in the rescue of a person being suspended in an upright position for longer than five minutes
- Consider workers' competence and ability to retain competence through regular exposure to equipment and skills needed to perform a rescue
- include training workers to administer first aid or have access to persons trained to use first aid and have access to first aid equipment.

## 8 Training

All Hunter Water employees and contractors required to use personal fall protection equipment will be trained in selecting, assembling, inspecting, and using all equipment associated with working at heights.

Hunter Water will provide competency-based training for employees required to use personnel fall protection.

Contractors are required to maintain their working-at-heights training skills. In all tasks, they must demonstrate competency to RIIWHS204E or equivalent by a recognised training provider.

Employees should undergo a competency-based assessment every two (2) years.



## Training and Competency Requirements

Task	Qualification /Competency
Working at Height (>2m)	RIIWHS204E or equivalent
Standby Person	RIIWHS204E or equivalent
Elevated Work Platform (which can reach <11m)	RIIWHS204E or equivalent TLILIC0005 or equivalent
Elevated Work Platform (which can reach >11m)	RIIWHS204E or equivalent TLILIC0005 or equivalent High-Risk Work Licence – WP
Scissor Lift	RIIWHS204E or equivalent TLILIC0005 or equivalent

## 9 Monitoring and Review

### Monitoring processes for this topic include:

- High Risk Audits
- Critical Element Focussed Observations
- Safe Behaviour Observations
- Field Interactions

### Review processes for this topic include:

- Review of applicable injury and incident report
- Review of hazard reports in Protecht
- Review of this standard and associated documents, Risk Register, Bow Tie diagrams following a high potential incident
- Engagement with the Field Safety Committee and any relevant sub-committees

## 10 Related Documents

Document ID	Document Title
<b>Assessment</b>	Pre-Task Risk Assessment (PTRA)
<b>Standard</b>	<a href="#">Consultation, Cooperation, Participation and Coordination</a>
<b>SWMS</b>	<a href="#">SWMS – Working at Heights</a>
<b>Booklet</b>	<a href="#">Hunter Water Lifesavers – Prevention of Falls</a>
<b>Manual</b>	<a href="#">WHSMA</a>
<b>Manual</b>	Responsibility, Accountability and Authority Manual – <a href="#">HW2021-534</a>

## 11 Associated Regulations and Standards

Document ID	Document Title
<b>Act</b>	<a href="#">WHS Act 2011 (NSW)</a>
<b>Regulation</b>	<a href="#">WHS Regulation 2017</a>
<b>Code of Practice</b>	<a href="#">Code of Practice – Managing the risk of falls at workplace</a>
<b>Code of Practice</b>	<a href="#">Code of Practice – Work Health and Safety Consultation, Cooperation and Coordination</a>
<b>Code of Practice</b>	<a href="#">Code of Practice – How to manager work health and safety risks</a>
<b>Standard</b>	AS/NZS1891.4:2009
<b>Standard</b>	AS/NZS4994.1:2009 Temporary Edge Protection
<b>Standard</b>	AS/NZS1576.1:2000
<b>Standard</b>	AS/NZS4576:2020
<b>Standard</b>	AS 2500.10:2006

