



RIIWHS204D

Work Safely at Heights



Safety Prompts

Symbols are used throughout this module to highlight specific points, particularly those that involve safety. The symbols and their meaning are shown below.



DANGER

This prompt is used when there is an immediate hazard that **IS LIKELY TO** result in severe personal injury or death if proper procedures are not followed.



CAUTION

This prompt is used to warn against potentially unsafe practices that **COULD** result in personal injury or death and/or property damage if correct procedures are not followed.



NOTE

This prompt is used when an operation, condition, or information is of sufficient importance to warrant highlighting.



KEY CONTROL

This prompt is used to indicate where a Key Control has been identified in the training material.

WORKING SAFELY AT HEIGHTS

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Introduction

Work at height takes place in any location when there is potential:

- To fall more than 1.8m
- To be seriously injured in a fall less than 1.8m
- To fall from one level to another as a result of working within 2m of an open edge, and
- For materials to fall on to people working or travelling below.

Work at height includes working on a roof, working near the edge of a pit or trench or anywhere that there is a risk of a fall. Examples include:

- Work from fixed, single or extension ladders where both hands are required to operate any required tools (fixed ladders include fixed ladders on mobile plant)
- Work from a single or extension ladder where it is not possible to tie off and secure the top of the ladder
- Work from all ladders at heights in excess of 1.8 metres
- All work on roofs, including buildings, storage sheds, tanks, silos, etc
- All work on mining faces, waste rock/ore/gravel/soil stockpiles (or similar surfaces) with a slope of more than 45°
- Elevated Work Platform (EWP) work including scissor lift work
- Work in excavations and confined spaces.

This resource contains information that will assist you to:

- plan and prepare for work
- select and install the correct equipment according to work requirements
- comply with work procedures and authorisations
- identify and control hazards
- perform work at height
- perform post operational tasks.



NOTE

This training resource is a guide only. Always follow your site procedures when performing your work.

1. OPERATOR OBLIGATIONS

All workers have an obligation to ensure the safety and health of themselves and others and to protect the environment in which they work.

The following actions will help you to do this.

- Ensure that you are physically and mentally fit for work before starting any job.
- Comply with your organisation's Code of Conduct on how you interact with others, for example, no bullying, discrimination, unethical or unsafe behaviour.
- Do not attempt any task unless you are trained and authorised to perform the task in a safe manner, e.g. do not work at height, or wear a harness, without holding an OTML Authority to Operate for Work at Height, or with approval to work in a restricted capacity by the area Executive Manager or General Manager.
- Select, check and use the correct personal protective equipment (PPE). Make sure that the PPE fits properly and is suitable for the task.
- Report unsafe conditions, activities, incidents or near misses to your supervisor or safety representative.
- Report damaged or defective equipment for repair.
- Operate equipment within manufacturer specifications and limitations and according to site procedures.
- Use your site lock and tag system.
- Adhere to site environmental guidelines to prevent damage to the natural environment and designated heritage sites.



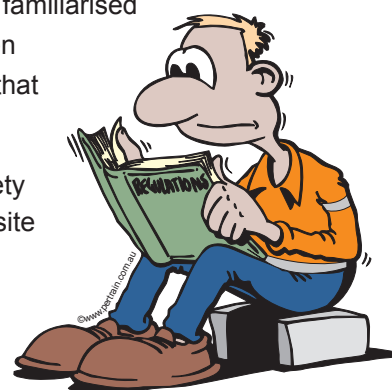
1.1 COMPLY WITH LEGISLATION AND SITE PROCEDURES

During your general and site specific inductions you would have been familiarised with organisational and site policies and procedures. These have been developed in accordance with legislation and are designed to ensure that work is undertaken safely.




Under safety legislation, all sites must develop and put in place a Safety and Health Management System that includes risk management and site procedures for activities on site.

Procedures are documented ways of doing a job. Procedures are developed from the risk analysis process (e.g. JSA) and after consultation with workers. They are monitored and amended as required. You must be familiar with procedures that apply to all employees, as well as task specific procedures. Activities covered by site procedures include:

- selection and use of PPE
- using fall protection
- first aid
- manual handling.



The general hierarchy of compliance documentation is shown in the following table.

GOVERNMENT 	ACTS OF PARLIAMENT (ACTS)	<p>Written laws passed by government to set out the general obligations that employers and employees have in relation to each other and themselves. Acts vary across states and territories.</p> <p>EXAMPLE: Mining (Safety) Act</p>
	REGULATIONS	<p>Lawful requirements that provide additional details about how to comply with the Acts.</p> <p>EXAMPLE: Mining (Safety) Regulations</p>
INDUSTRY 	CODES OF PRACTICE	<p>Developed by industry to provide practical guidance for complying with Acts and Regulations.</p> <p>EXAMPLE: Code of Practice for Managing the Risk of Falls at Workplaces (Australia)</p>
	STANDARDS (National and International)	<p>Documents that detail practical guidelines, which when followed will ensure that a minimum quality benchmark standard is achieved for a product, service or process. Standards are established by a recognised body such as government or an industry regulator. They cover all industry types including construction, business, and energy and water utilities.</p> <p>EXAMPLE: AS/NZS 1891.4 Industrial Fall-arrest Systems and Devices - Selection, use and maintenance</p>
ORGANISATION 	MANAGEMENT SYSTEMS	<p>Developed by management to comply with legislation. Management systems provide overarching governance for all site activities including safety, human resources, finances, environment and community engagement.</p> <p>EXAMPLE: Risk Management System, Authority to Work (ATW) System</p>
	POLICIES	<p>Broad statements of the overall intent and direction of a specific activity or interrelated group of activities. Policies ensure that management plans are implemented and that everyone's roles, responsibilities and obligations are clearly defined.</p> <p>EXAMPLE: Fit for Work Policy, Environmental Policy</p>
	PROCEDURES	<p>Easy to understand, step-by-step instructions for carrying out tasks safely and in an environmentally sustainable way.</p> <p>EXAMPLE: Safe Work Procedures</p>



NOTE

You must comply with applicable government legislation and site requirements. If you do not know how to access the relevant information, ask your trainer or supervisor.

2. PLAN AND PREPARE FOR OPERATIONS

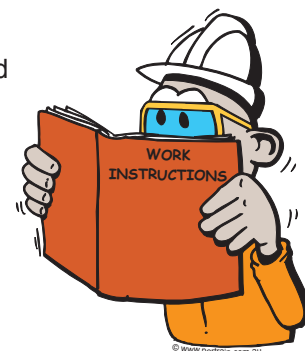
Prepare for work at height by gathering the required information and planning the job. You must identify the work requirements and equipment resources for the task.



2.1 OBTAIN INFORMATION

The information you gather will help to ensure that your work complies with the task requirements. Depending on the work site and task, you may need to obtain:

- Job requirements
- Site and task procedures
- Authority to Work (ATW).



2.1.1 JOB REQUIREMENTS

Your supervisor will give you the work plan and other information, this may include quality requirements, site plans, equipment specifications and ATW requirements.

2.1.2 SITE AND TASK PROCEDURES

Once you know what your task requires, you will need to obtain all relevant site and task specific procedures. This may include instructions for PPE, isolations, ATWs and procedures on how to conduct your task. Most of these will be discussed during the shift briefing. You will need to obtain the information if it is not provided during the brief. Never start any task without all of the required information.



NOTE

A documented and approved Job Safety Analysis (JSA) and Procedure is required for all work at height.

2.1.3 AUTHORITY TO WORK SYSTEM

An authority to work (ATW) system is a formal system used to plan, control and complete work in accordance with safe work practices. The ATW system requires communication and coordination from management, supervisors, ATW issuing officers and those who complete the task. A risk assessment is conducted prior to issuing an ATW.



All persons involved with the ATW must sign on and off the ATW.

The ATW system applies to tasks such as:

- working in confined spaces
- working at heights
- hot work
- digging or excavation
- land/vegetation clearance
- high voltage work.

2.1.4 ASSOCIATED CLEARANCE CERTIFICATES

Clearance Certificates identify the hazards and list the controls that must be applied to ensure that specific high risk work can be performed safely.

Work at Height requires a Work At Height Clearance Certificate that will typically include the following information:

- work location
- hazards
- controls
- job steps
- post fall recovery plan
- checks and inspections
- personnel
- ATW holder
- authorisation
- authorisation closure and sign off.

Where there is a change in the task risk, the person in control of the work at height will identify the hazards, assess the risks and update JSA for the task. They may need to cancel the existing ATW and/or clearance certificate and arrange for new authorisations before the task can proceed.

OK TEDI MINING		Authority To Work Form		ATW: 00000	
A	Lockbox #:		Work Order #:		
	ATW Lock #:		Department:		
	Start Date:		Work Area:		
	Expected Completion Date:		Equipment Name:		
	SCOPE OF WORK				
B					
C	ISOLATIONS				
	If isolations are required for the work detailed in Section B, is there an approved Isolation Schedule attached to the lockbox?			Yes <input type="checkbox"/>	No <input type="checkbox"/>
	If No, cease the issuing of the ATW and request the ATW Recipient to provide an approved Isolation Schedule. ATW Recipient has inspected the isolations and confirm that they are secure and appropriate for the work as detailed in Section B of this ATW.				
	ATW Recipient Name:		Signature:		Date:
D	CLEARANCE CERTIFICATES				
	Certificate Type	Y/N	#	Certificate Type	Y/N
	Work At Heights			High Voltage	
	Confined Space			Radiation	
	Hot Work		Excavation		
E	DIRECT CONTROL				
	Does Direct Control form part of the Scope of Work as detailed in Section B?			Yes <input type="checkbox"/>	No <input type="checkbox"/>
	If Yes, has there been a JSA developed and approved specifically for the Direct Control activities?			Yes <input type="checkbox"/>	No <input type="checkbox"/>
If No, cease the issuing of the ATW and request the ATW Recipient to provide an approved JSA.					
F	SIMULTANEOUS OPERATIONS				
	This section is to be completed on the day of the Issuing of this ATW by way of inspection of the work site by the ATW Issuer and ATW Recipient immediately prior to issuing the ATW.				
G	ATW ISSUE				
	I the undersigned ATW Issuer declare that the work detailed in Section B of and is safe to proceed under the supervision of the undersigned Recipient.				
	ATW Issuer Name:		ATW Issuer Signature:		
	Date Issued:		Time Issued:		AM / PM
	I the undersigned Recipient declare that I have discussed the work detailed in Section B with the Issuer and ensure that all work will be carried out safely.				
	ATW Recipient Name:		ATW Recipient Signature:		
H	ATW CLOSURE				
	I the undersigned ATW Recipient declare that work detailed in Section B of this ATW has been completed and has been inspected by an ATW Issuer prior to closure of this ATW.				
	ATW Recipient Name:		ATW Recipient Signature:		
	Date Issued:		Time Issued:		AM / PM
	I the undersigned ATW Issuer declare that I have inspected the work area and verify that the work detailed in Section B of this ATW has been completed prior to closure of this ATW.				
	ATW Issuer Name:		ATW Issuer Signature:		
Distribution:		White Original – Lockbox	Yellow Copy – Work Group	Blue Copy – Remains in Book	
Checked by: Brian Lesley/Geoff Atkinson		Authorised by: Kedi Ilimit		Next Review:	
Doc ID.: 2.06-001 (b)	Rev No.: 1.0	Date of Review: 01/12/2016	Date Printed 14/12/2016	Page 1 of 2	

3. IDENTIFY AND CONTROL HAZARDS

As part of the risk management process, managers will ensure that:

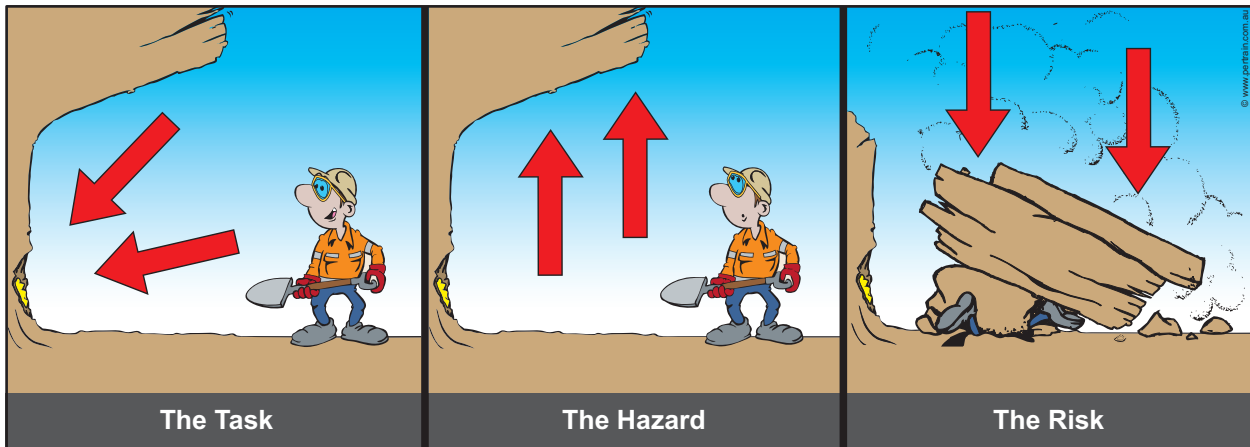
- Work at height tasks are risk assessed to determine their potential to cause injury to any person associated with the task
- All identified risks and controls are included in the Risk Register.

All employees should be aware of the hazards that could be associated with Work at Height operations (e.g. falling objects and/or equipment) and the risk they pose to people, equipment, the community, environment or the organisation. Some hazards have high risk potential. The presence of any hazard will require appropriate control measures to be implemented.

Personnel who are exposed to the risk of falling must:

- Participate in the risk assessment of the work
- Know and understand the control measures for falls and falling object prevention
- Be competent and authorised in the correct use and application of control measures
- Inform their supervisor if they have any medical condition (permanent or temporary) that may adversely affect their ability to work safely at heights.

Hazard	Risk
A hazard is a condition or situation that has the potential to cause injury, damage or loss to personnel and/or equipment.	A risk is the likelihood that a harmful consequence may result from exposure to a hazard.



3.1 HAZARD IDENTIFICATION

Hazards must be identified and managed to avoid an incident or emergency.

The general process for managing hazards is:

- stop
- think about what you need to do
- identify hazards
- plan and implement controls to minimise the risks associated with each hazard
- proceed with the task, and monitor the effectiveness of the controls.



3.1.1 SITE INSPECTION



Start by conducting a site safety inspection in and around the work area using a personal hazard ID tool, e.g. Take 5. Look for potential hazards that could result in falls from height, or that could result from working at height, such as:

- Work area layout, e.g. other personnel or equipment in area, overhead powerlines
- Inadequate lighting
- Uneven, or unstable ground conditions
- Ground not able to support equipment
- Physical condition and safety of surfaces, such as:
 - wet, polished or icy floors
 - dirty or greasy handrails, rungs or steps
 - uneven or sloping work surfaces
- Change in levels, exposing a worker to fall from one level to another
- Instability of temporary or permanent structures
- Blocked or limited entry to and exit from the work area
- Missing edge protection, e.g. guards for holes, openings and excavations
- Adverse weather conditions, e.g. rain, wind, lightning.



Conducting a site inspection before starting work, will help you to identify if conditions are suitable for you to work safely.

3.1.2 TYPES OF HAZARDS

Working at heights includes climbing up or entering a structure as well as working close to edges.

Hazards associated with working at heights, that have the potential to cause injury or harm, include:

- falls from height including into a pit or excavation
- dropped objects striking a person
- contact with overhead powerlines
- suspension trauma
- changing weather conditions
- poor manual handling technique
- untrained, inexperienced, unauthorised personnel completing the task or entering the work area.

3.1.3 HAZARD REPORT

A hazard report provides a means of communicating information about an identified hazard to your supervisor and management. The purpose of reporting the hazard is to prevent an unsafe condition or behaviour from causing an incident or an emergency. Controls can then be put in place to reduce or eliminate the hazard.

3.2 RISK ASSESSMENT

3.2.1 WORK AT HEIGHT RISK ASSESSMENT CHECKLIST

Use the Work at Height Risk Assessment Checklist to identify hazards and document control measures. The checklist includes hazard/risk examples. The Work at Height Risk Assessment Checklist can be used to create a JSA if required.

Hazard checklist	Examples of the Hazard / Risk	Y/N	Control measures (using Hierarchy of Controls)
1. Is there potential for people working below to be injured as a result of your activities?	<ul style="list-style-type: none"> Falling tools, materials, equipment? Falling objects bouncing off pipes etc? Hot slag/sparks falling onto others? 		
2. Correct work design	<ul style="list-style-type: none"> Pendulum affect Incorrect choice, use of harnesses/ lanyards 		
3. Portable or movable elevated work platform & cages.	<ul style="list-style-type: none"> Unqualified personnel operating EWP? Could the EWP move unexpectedly? Could mobile plant collide with EWP? 		
4. Portable ladders	<ul style="list-style-type: none"> Is a ladder the best choice for the task (used mainly for access, not suitable for lengthy or heavy work)? Has the right type of ladder been selected for this task (fibreglass/electrical, extension, step etc)? Has the ladder been inspected and found to be in good working 		

3.2.2 JSA

A Job Safety Analysis (JSA) is a tool used by a work team to identify job steps and control hazards for a task. Conduct a JSA if:

- there are uncontrolled hazards
- there is no written Safe Work Procedure for a complex task
- ATW or clearance is required, for example working at heights
- a procedure needs to be changed
- equipment brought to the site creates a hazard
- an incident has occurred during operations.

A JSA is developed by one or more people who know the job well and have been trained in the development of JSAs. The JSA must be reviewed by at least two other people and the Supervisor before being signed and used.

Every person who takes part in the JSA must read and understand the information before signing the JSA form and commencing work.



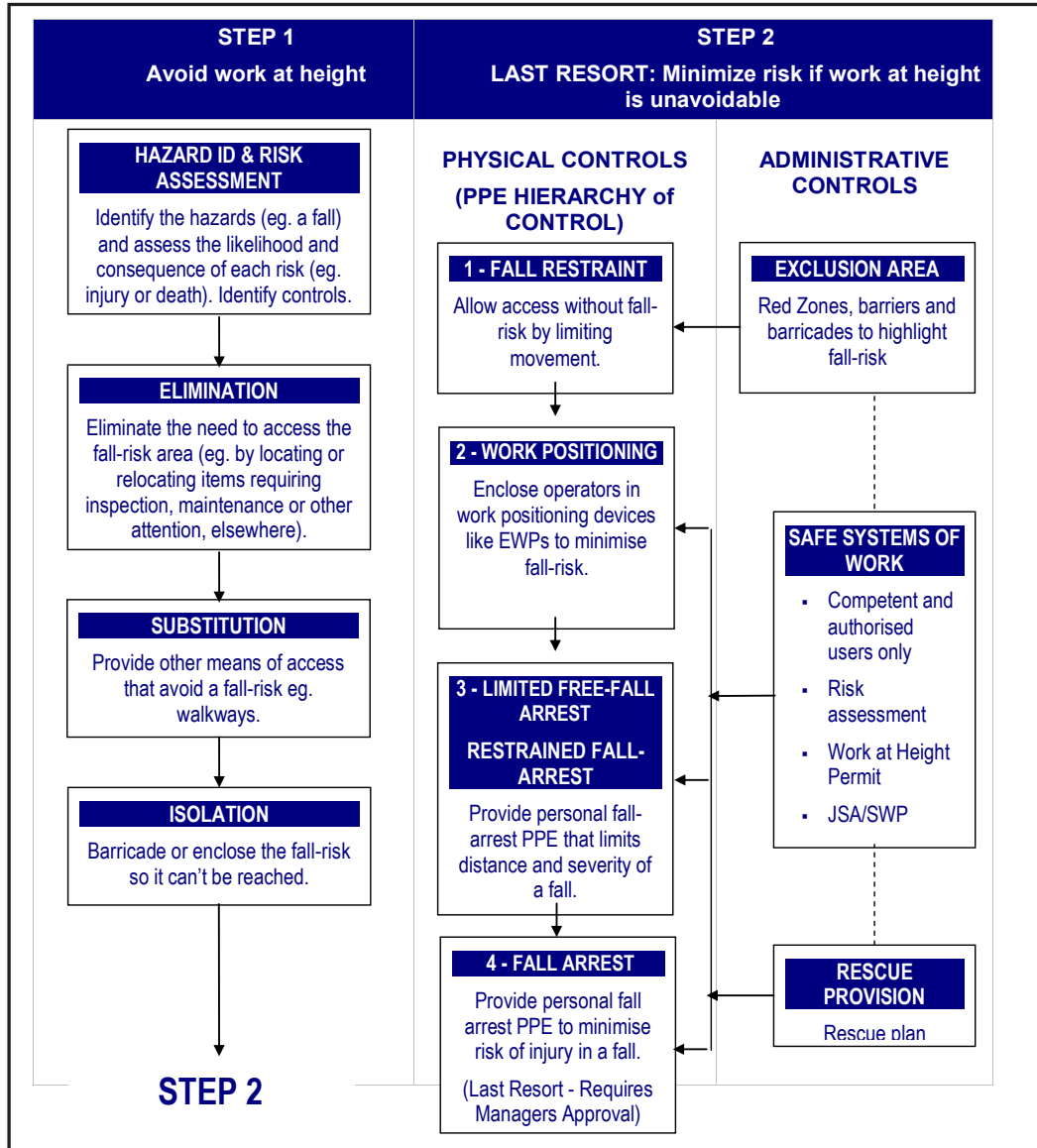
NOTE

If you do not understand the JSA, disagree with the contents, or feel that the task is not safe to do, talk to your supervisor.

If conditions change during the job, the work must stop while the JSA is reviewed and updated. The Supervisor must review the revised JSA before authorising it. Once authorised personnel involved in the task must again read and understand the information and sign onto the form before resuming work.

3.3 HAZARD CONTROL OPTIONS

Control measures are any actions taken to eliminate a hazard or reduce the risk for personnel, equipment and the environment to an acceptable level. The control measures should be selected using the principles of the hierarchy of controls, from most effective to least effective.



Control methods for working at heights vary depending on the task to be done. If the hazard can not be eliminated, a combination of controls may have to be used.

3.3.1 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Working at heights requires the use of both basic and specialised safety equipment. All equipment must comply with approved design standards, e.g. AS 1891.4, and be used in accordance with the manufacturer and site specifications.

Mandatory PPE on site includes:

- Non slip, steel capped boots, or gum boots in wet conditions
- Eye protection, e.g. safety glasses
- Gloves
- High visibility protective clothing, e.g. high vis stripes or vest
- Safety helmet (with cap lamp for underground)



All personnel working at heights must wear a fall protection harness attached to an approved anchor point. Other PPE that is mandatory for your specific task will be listed in the work plan and/or discussed at the work briefing. Work at Height PPE will not be issued from a store without an authorised ATW.

PPE must be clean, in good condition and properly fitted and adjusted before it is used. Work at height PPE must be entered into a Work at Height PPE register, securely stored in each line area and formally inspected on a quarterly basis.

- Users shall inspect PPE before each use using the PPE checklist.
- PPE shall be inspected 6 monthly by a competent work at height person as required by AS 1891.

Regular inspections will identify defects at an early stage, before they become a significant problem that may cause injury and equipment or environmental damage.

3.3.2 FALL PROTECTION SYSTEMS

A personal fall protection system secures you to the anchor point of a work platform, building or structure. Personal fall protection equipment includes:

- restraint devices that prevent a person falling e.g. industrial rope access systems and fall-prevention systems
- fall arrest systems that arrest or catch a person who has fallen e.g. fall-arrest full harness with lanyard assembly.

Always work with another trained person. One person should act as spotter/safety monitor to initiate rescue procedures if necessary.

Personal fall protection equipment must be used:

- whenever there is inadequate fall prevention
- when working from an elevated work platform
- when safety nets or fixed platforms are being used
- when guardrails are not in place.



NOTE

Follow site safety procedure when using personal fall protection equipment.



RESTRAINT DEVICES

Any device that attaches you to an approved anchorage point is a restraint. A fall restraint restricts your movement to stop you from walking or falling off an unprotected edge. A restraint device is made up of a safety harness, a fixed length lifeline and an anchor. The length of the lifeline is calculated so that the worker cannot go past the unprotected edge of the work area.

The devices that are part of the restraint system include:

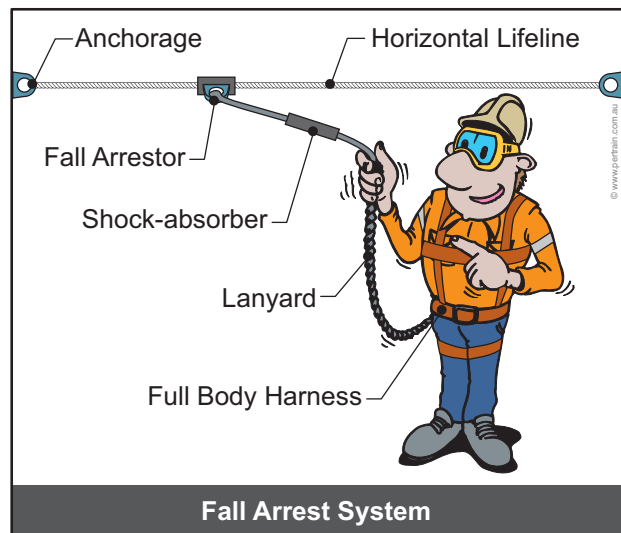
- restraint belt or work positioning harness protect a worker on an elevated surface so that the worker can use both hands and move the body as required to work safely
- fall restraint line is a line attached to both the worker and the anchorage point
- fall-prevention static line (to which the restraint line is attached)
- self-locking triple action hooks or karabiners at all attachments and at anchorage points
- lifeline anchorage points, capable of withstanding body weight and momentum.

FALL ARREST SYSTEMS

Personal Fall Arrest equipment is designed to stop you or catch you in a fall from a working level. There are three critical factors of a fall arrest system.

1. The equipment should reduce the free fall distance as much as possible.
2. All possible obstructions to the free fall should be removed.
3. The person caught by the arrest system should be removed immediately to avoid suspension trauma.

The illustration shows the different components of a fall arrest system. Components must be compatible.



Components	Purpose
Full body safety harness	Supports the worker in the event of a fall.
Lanyard	Connects the safety harness to the anchorage point or static line.
Anchorage point	Secure point to which a lifeline is attached. Anchorage points must be designed and maintained to a relevant standard (e.g. AS 1891), approved and labelled with the safe working load limit.
Fall arrester/deceleration device	“Grabs” the lifeline and holds firmly when vertical movement occurs.
Shock absorber/personal energy absorber	Absorbs kinetic energy as the worker is stopped and limits force on the body. Part of the lanyard assembly.
Lifeline	Flexible line attached to both the anchor point and other components attached to the worker.



CAUTION

The fall arrest system must support your full weight as well as any tools or equipment.

If the work method requires you to detach yourself and re-attach yourself at heights, then a dual line system must be used. In this way, you will always have at least one connection point at all times.

SAFETY HARNESS

Safety equipment must meet the requirements of Australian Standard 1891.

A safety harness consists of adjustable shoulder and leg straps and belts with an attachment point for a lanyard.

Make sure that your harness fits correctly. You should be able to slide your flat hand between the harness and your body. If all adjustable straps are as tight as they can be, and you can fit more than a flat hand between your body and the straps, you need a smaller harness.

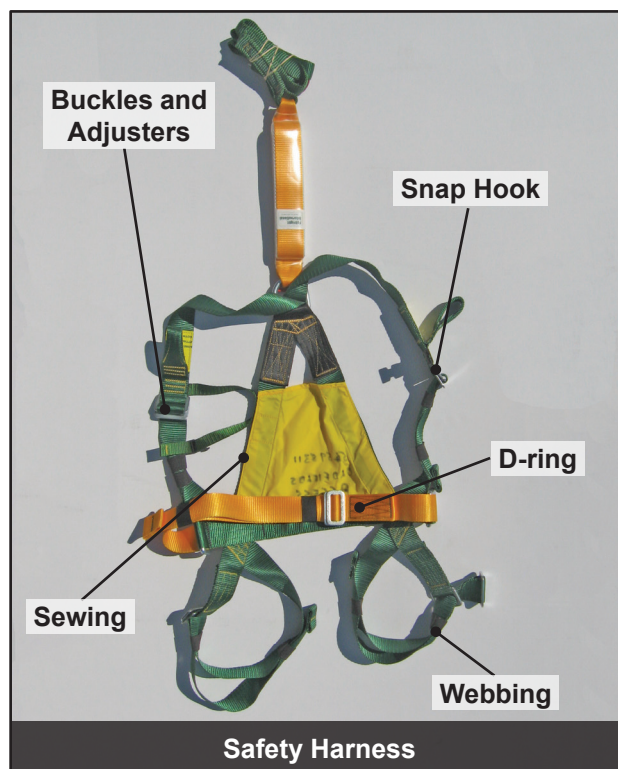
The harness is susceptible to wear and tear. Site management is responsible for regular inspections of this equipment and for recording these inspections and relevant details on the site register.

Inspect harness before and after each use. Do not use the harness if it is frayed, split or there are any other obvious signs of damage to any part of the harness. Inspect the:

- webbing/straps – for cuts, tears, corrosive damage and deterioration
- snap hooks/connectors – for broken or weak springs and free movement
- buckles and adjusters – for wear and tear or damage
- straps – for damage or weakening of sewing threads through mildew or heat.

If your harness or any other fall protection equipment is excessively worn, or is damaged, tag it out immediately.

Safety harnesses are labelled and you should check the label for the date of last inspection or expiry date and identification numbers. If you cannot read the harness expiry date on the label, do not use it until it has been inspected by a qualified and authorised person.



CAUTION

Notify your supervisor immediately if you find any damaged equipment and tag out or dispose of equipment as per site procedures.

ANCHOR POINTS

An anchor point is a fixed point that a fall-arrest system is connected to, that can hold the weight of a falling person and withstand a static load of 15 kN (1500 kg). Anchor points must be labelled with the safe working load limit.

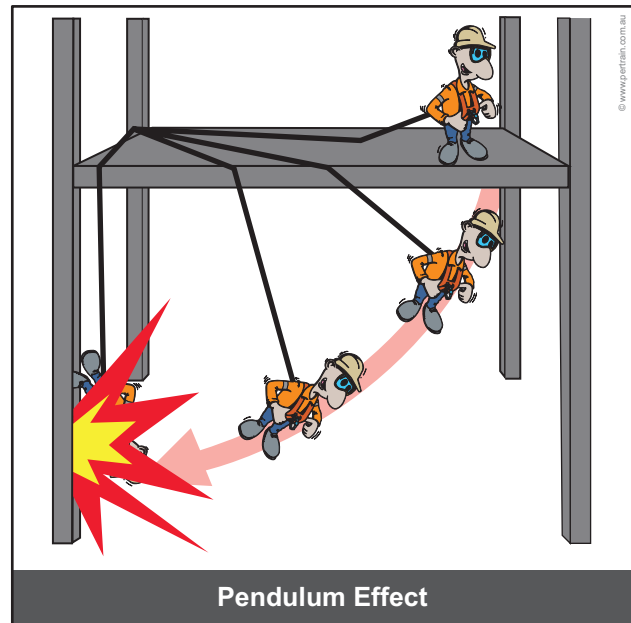
Authorised personnel e.g. a structural engineer or a working at heights specialist, will determine and test anchorage points before use.

Anchor points must be located as high as possible to minimise the free fall distance should the person fall.

A secondary anchorage point and lanyard or line can eliminate the **pendulum effect**.

The pendulum effect is a potential hazard in using fall arrest systems. The person falling goes into a horizontal swing motion.

If a dedicated anchorage point is not available, or it is not practical to install dedicated anchor points, use an engineered point such as a structural beam above the head of the worker. A site risk assessment analysis must be completed and approved by a competent person before work starts.



DANGER

Do not tamper with anchor points.

Do not use the handrail of a walkway for anchorage, always consult with the relevant personnel to determine anchor points.

SUSPENSION TRAUMA

Suspension trauma can occur with a fall arrest system when a person has an arrested fall and is suspended in an upright, vertical position with the harness straps causing pressure on the leg veins and arteries.

The lower legs have the capacity to store large amounts of blood, which reduces the return of blood to the heart. Slowing heart rate can cause the person to faint. This can also lead to renal failure and eventually death. It is vital to rescue person suspended in a full body harness as soon as possible.



DANGER

If you are involved in the rescue you must not put yourself at risk. Persons working at height as well as emergency response personnel must be trained in the rescue procedures

Preventing Suspension Trauma

To prevent suspension trauma ensure that:

- you never work alone when using fall protection
- the harness allows your legs to be kept horizontal
- you are trained to do the following when hanging in a harness
 - where possible, move legs in the harness
 - where possible, move your legs as high as possible and your head as horizontal as possible.

3.3.3 RESCUE PLAN

A Work at Height Rescue Plan must:

- be capable of rescuing unconscious or injured persons from any part of the site
- specifically address the rescue of a person suspended from a fall arrest harness where fall arrest is used as a control
- be reviewed by the work party as part of the JSA process before the start of work
- be physically tested by a qualified person if a risk assessment deems it necessary.

RESCUE PLAN		
1. Means of Rescue	<ul style="list-style-type: none"> • Self Rescue? • Rope Rescue? • Elevated Work Platform? • Other? 	Resources Required: <i>Identify the People, ERC, Equipment required</i>
2. Readiness of Rescue Resources	<ul style="list-style-type: none"> • Have all the people mentioned in the rescue plan confirmed that they are available in the event of an emergency? • Do they know the nature & location of the possible rescue? • Is the nominated equipment readily available and accessible? 	Yes or No? <input checked="" type="checkbox"/>
3. Have all these people read and understood their role in the rescue plan?	<ul style="list-style-type: none"> • Work Team Members? • Sentry? • Rescue Personnel? 	Yes or No? <input checked="" type="checkbox"/>



You must participate in the development of a rescue plan when fall arrest PPE is being used as a control device. The plan must detail how persons will be safely retrieved in the event of a fall.



NOTE
Check with your supervisor to ensure that anchorage points, fall protection and associated equipment are correctly fitted and adjusted.

3.3.4 MINIMISE THE RISK OF CLIMBING FALLS

Climbing falls can be prevented by using the correct climbing technique when entering or leaving a scaffold. Prevent climbing injuries by observing the following points.

- Use nonslip steps and hand holds provided to enter or leave the elevated work area.



NOTE
Do not use scaffold framework to access the work at height.

- Inspect, clean and where necessary have steps and hand-holds repaired before use.
- Face towards ladders when climbing up and down.
- Always maintain three point contact with steps and handrails (two feet and one hand or one foot and two hands).
- Do not climb a ladder or stairs with your hands full. Clip hand tools to your toolbelt and have materials and heavy tools raised onto the work area using ropes, a gin wheel or materials hoist.
- Never jump onto or off an elevated work area.



3.3.5 MINIMISE THE RISK OF FALLING OBJECTS

An incident involving objects falling from heights can result in serious injury, death, equipment damage and lost production due to work stoppages and investigations.



NOTE

Report any fallen or dropped object immediately to your supervisor.



Minimise the risk caused by falling objects with the following control measures.

- Secure tools to your tool belt using a suitable lanyard.
- Place rubber matting on the floor of the work platform to cover the mesh and prevent items falling through.
- Place tools and other equipment neatly away from the edges, or install edge protection.
- Secure unused objects and materials to the work platform and remove them from the work area as soon as practicable.
- Good housekeeping. Keep the work platform tidy. Do not leave debris on work platforms.
- Do not balance tools and parts on the platform control console (if applicable).
- Create a restricted drop zone using signs and barricades.
- Install overhead protection and safety nets to protect personnel below the work area.
- Securely fasten all objects being raised or lowered in a bag/box or by tying off. Make sure that lines used to raise and lower items are within the Working Load Limit (WLL).
- Never throw objects to or from an elevated work area.



DANGER

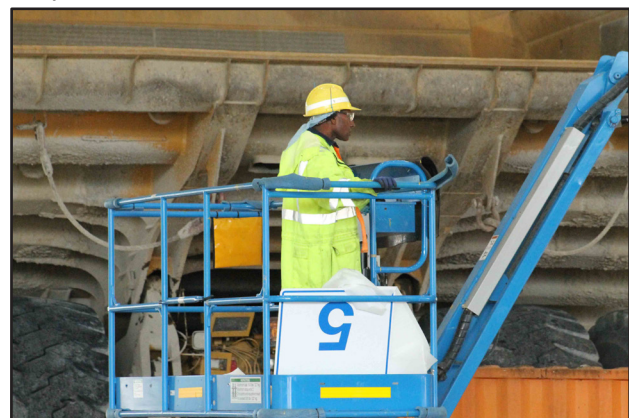
Never stand under a load being lifted or lowered from an elevated work area.

4. SELECT AND INSPECT EQUIPMENT

Consult with your supervisor to select the materials, tools and equipment to carry out the job safely and efficiently. Consider the following points.

- Equipment must be suitable for the task and the conditions. Consult with authorised personnel, e.g. scaffolder, working at heights specialist, supervisor and the manufacturer instructions to confirm equipment suitability.
- Using the wrong equipment is not only unsafe, but it adds to work costs through machine and equipment wear and damage.
- Only operate equipment that you are competent and authorised to use.

Inform your supervisor if you believe that the equipment assigned to you is damaged, out of date or cannot do the job safely and efficiently.



Elevated Work Platform

4.1 PERFORM EQUIPMENT CHECKS AND INSPECTIONS



Check tools, equipment and plant for serviceability before and after using them on site. Do not use any equipment that is in an unsafe condition.

- Check work at height equipment for:
 - test and inspection tags currency
 - damage, wear, corrosion or distortion
 - clear labelling for safe working loads.
- Complete detailed and accurate defect / maintenance reports.
- Use tools and equipment in a safe manner within the limits recommended by the manufacturer.
- Keep equipment clean (dirt can hide defects)
- Ensure required 3rd party inspections (e.g. for fall protection equipment) and regular maintenance has been carried out.

Consult with the appropriate personnel to arrange maintenance or repairs and to access replacement material.

- Request the stores or safety department to replace faulty or damaged lanyards.
- Check with workshop personnel to arrange maintenance of equipment such as an elevating work platform.
- Refer to an authorised and licensed scaffolder on any scaffolding issue.

Rectify any faults that you are authorised to fix in accordance with site procedures and the manufacturer guidelines. Isolate any defective equipment and attach an Out of Service tag to the item. Report all damaged or defective equipment according to site procedures.



NOTE

Always advise your supervisor of any faults or damaged materials, tools or equipment that will affect the task.

5. INSTALL AND USE EQUIPMENT

Working at heights requires the use both of basic and specialised safety equipment. All equipment must comply with approved design standards and be used in accordance with the manufacturer and site specifications.

5.1 CHECKS BEFORE STARTING WORK AT HEIGHT

Before starting work at height you and your team should perform the following checks.

- Check that the authorisation for the job is complete.
- All personnel are qualified and authorised to perform the task.
- Read safe work procedures/instructions carefully.
- If an Elevated Work Platform is required, check that the Safe Working Load is sufficient. (Calculate the combined weight of personnel and equipment.)
- Check that correct equipment is available and that it is not defective.
- Ensure there is sufficient lighting. Have a lighting plant installed if necessary.



- Secure equipment items and tools on the work surface or in a container.
- Check the condition of PPE and safety restraints.
- Organise a spotter/sentry to observe from the ground and ensure that the person understands his/her role and responsibilities.
- Work out signal procedures to be used with other personnel involved in the task including hand signals for raising and lowering.

5.2 BASIC EQUIPMENT

5.2.1 SIGNAGE

Safety signs draw attention to any object or situation that could cause harm. Place signs as close as possible to hazardous areas, such as elevated work areas.

Do not move safety signs unless you have been authorised to do so.

Conditions can change during the course of the work. Monitor the work area to ensure that the risk control measures you have put in place are still practical.



NOTE

Report or replace any damaged signs.

5.2.2 BARRICADES

A Barricade Plan must be prepared as part of the ATW for work at height. Barricades limit access into areas that contain holes, excavations, openings, high traffic or areas in which there is a danger from falling objects. Anyone who creates a hole, opening or is working at height is responsible for erecting a barricade in line with site requirements.

Barricades should be:

- at least 1 metre high
- square, erect and level
- at least 2 metres back from the elevated area
- display signage on each side of the barrier stating the nature of the enclosed hazard.

If the work at height area is to be extended, the barricade must also be extended.



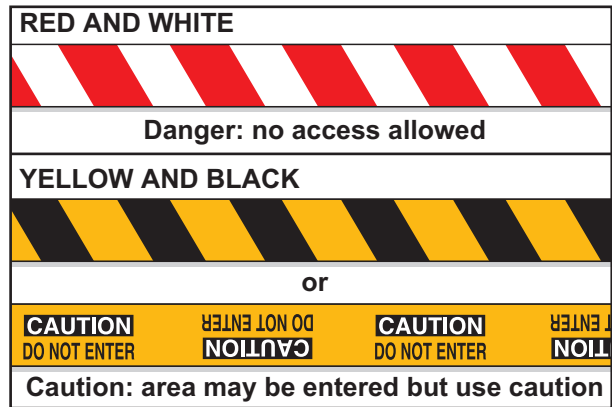
DANGER

Do not enter a barricaded area without authorisation.



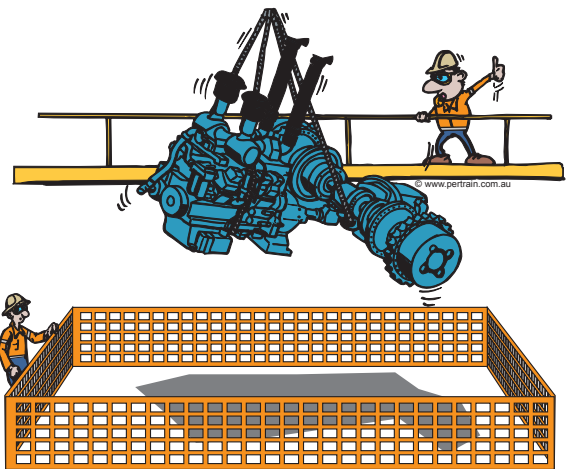
WARNING BARRICADES

Warning barricades may be erected around the 'Red Zone' to call attention to a hazard, but offer no physical protection. The red zone is an exclusion area demarcated within two metres of an unprotected edge where there is a work at height fall danger.



PROTECTIVE BARRICADES

Protective barricades provide physical protection. This type of barricade consists of posts and rails or chains, or other physical barrier to entry. Protective barricades must be erected before work begins. An entrance, opening or gate should be placed where practical to allow access to and from the barricaded area.



5.2.3 SCAFFOLDING

Australian Standards required that scaffolds be erected by a qualified and authorised scaffolder. Your supervisor or management personnel will organise scaffolding requirements.

Signage and barricades must be installed around scaffolding to prevent access during and after construction.

You must not interfere in any way with the construction of the scaffolding. Changes to the structure can be made only by an authorised scaffolder. If scaffolding is left on the job site for a period of time, then it must be inspected regularly by a qualified and authorised person.

5.2.4 LADDERS

Ladder design and usage are governed by Australian Standards. Ladders used include fixed ladders or portable ladders. Ladders should only be used to carry out lightweight work of short duration following site procedures.

FIXED LADDERS

Typically, fixed ladders are single rung vertical or near vertical ladders permanently attached to buildings. To work on a fixed ladder safely, you must have three points of your body in contact with the ladder at all times.

If a series of ladders is positioned against the structure, then ladder cages or platforms must be provided every six metres. A ladder cage is a barrier and does not provide complete fall protection and therefore must be used in conjunction with a full body harness and lanyard.

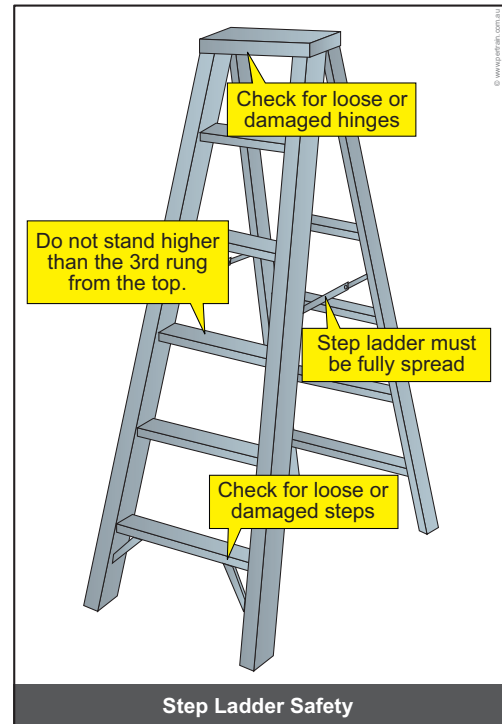
PORTABLE LADDERS

The two kinds of portable ladders (step ladders and extension ladders) used for working at height are similar to those used in domestic situations. Accidents happen if ladders are not used correctly in any context. On the work site, follow site safety procedures when using portable ladders.

Always inspect a ladder for damage before using it. Any ladder that has broken or missing rungs, or splintered or broken side rails is unsafe and should be tagged and taken out of service following site procedures. All ladders should have non-slip rungs.

STEP LADDERS

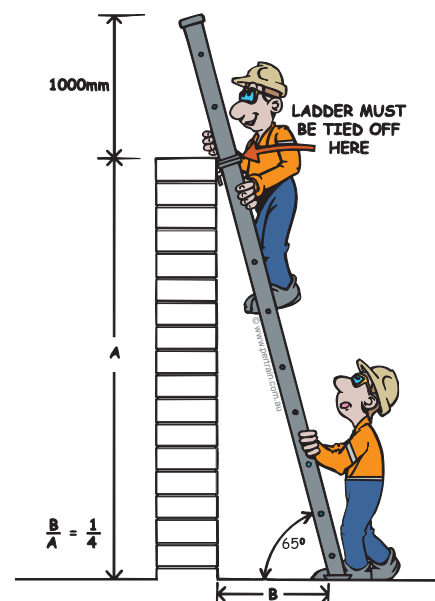
- Ensure that the correct length ladder is used.
- Place the step ladder on a level, firm surface so that it will not wobble, slip or sink.
- Use only in the fully opened position.
- Make sure the ladder spreaders are tight.
- Do not use a defective ladder, even for a small job. Replace a defective ladder immediately.
- Never lean out past the confines of the ladder.
- Never stand higher than the third step from the top.



STRAIGHT AND EXTENSION LADDERS

When placing a ladder against a structure, the distance between the base of the ladder and the wall should be 1/4 of its vertical height. This should make the ladder slope approximately 65°.

- Use a ladder that is long enough to protrude at least one metre above the step off point.
- Do not use metal ladders or timber ladders with metal reinforcing where electrical hazards exist.
- Place the ladder away from access areas and swinging doors.
- Place on a firm, level, uncluttered, non-slip surface.
- Do not use ladders on working platforms to gain extra height.
- Overlap extension ladders by a minimum of three rungs.
- Ensure the ladder is secured against movement at the top.
- Wear a safety harness.
- Face the ladder when climbing up and down.
- Maintain three point contact.
- Place your hands on the rungs, not on the sides of the ladder.
- Do not carry tools or equipment in your hands when ascending or descending a ladder. Carry tools in a shoulder or belt pouch, or raise in a container using a rope.



- Only one person at a time is permitted on a ladder.
- Keep ladder rungs clean.



DANGER

Falling equipment can cause serious injury - secure all equipment.



5.3 SPECIALISED EQUIPMENT

A work platform is a working space that is elevated above the surrounding floor or ground. There are two types of work platform, including the:

- elevating work platforms (e.g. scissor lift, boom lift crane workbox, forklift workbox)
- mobile work platform or scaffold.

5.3.1 EWP

Elevating Work Platforms (EWP) include equipment such as aerial platforms, boom lifts and scissor lifts. EWPs require transportation between work sites. They can be towed, pushed, self-propelled or vehicle-mounted. The drive mechanism that lifts and lowers the platform is powered by hydraulics or pneumatics. Lifting is done by means of a telescoping device, scissor action or other means, from a base support.

Conduct EWP activities following site procedures, using the following points as a guide.

- Enter and exit the EWP only when it has been lowered to the ground.
- Check that the barricade around the base of the EWP is secure and positioned to protect people on the ground from falling objects.
- Keep the area around the EWP clear of obstructions.
- Monitor the work area to ensure traffic and other services do not impact on the job.
- Secure all material on the EWP while working.
- Work with only one other person in the EWP.
- Do not allow your body to protrude from the platform.
- Clean up material spills immediately.
- Do not work in the EWP in windy or stormy conditions.
- Conduct a JSA and site hazard analysis on the task if the workplace conditions change.



NOTE

Only qualified and authorised operators can operate an EWP and all personnel inside the basket **MUST** wear an appropriate fall arrest device connected to a dedicated anchor point in the basket.



ELEVATING WORK PLATFORM HAZARDS

Carefully assess the risk level of using EWP. Tipping or overloading an EWP could cause an accident. Adopt the following safety points.

- Stabilise the work platform. The ground supporting the base must be hard and reliable.
- Make sure the load does not exceed the SWL of the machine.
- Locate materials and equipment within the basket so that they are safely secured and evenly distributed. Secure electrical cords, air cords or hydraulic lines to the guardrails.
- Identify emergency stop button locations on the platform.
- Only climb into the basket when it is on the ground.
- Check that the risk control measures cover contingencies such as vehicle and pedestrian traffic.
- Check the distance of your work from overhead power lines. Keep to the Exclusion Zone limits.

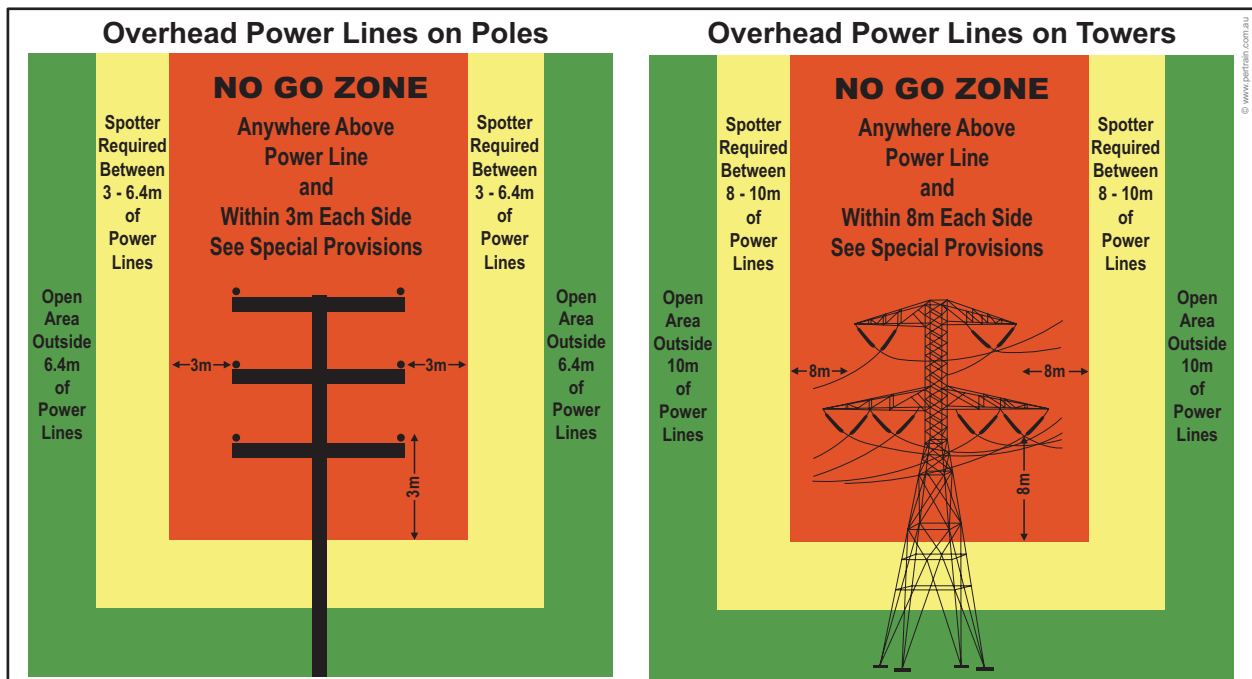


NOTE

An EWP should be left in a properly stowed configuration whenever it is unattended. It should not be left extended as it will make the unit unstable.

Electrical Hazards

Contact with overhead power lines is the principal electrical hazard when operating an EWP. Working in the vicinity of power lines is dangerous, as electric current can jump the gap (arc) between the conductor and the platform. A spotter is required if the platform is placed within 8 to 10 metres of power line towers, and 3 to 6.4 metres of subsidiary lines.



NOTE

Follow state and site regulations regarding distances and no go zones when working near overhead power lines.

5.3.2 MOBILE SCAFFOLD/WORK PLATFORM

A mobile scaffold is an independent scaffold that is freestanding and mounted on castors. Mobile scaffolds must be provided with information regarding safe use and erection, and erected in accordance with manufacturer specifications.

- The height of a mobile scaffold, from the bottom of the scaffold to the working surface, should be no greater than three times the minimum base dimension, unless otherwise specified by the manufacturer, supplier or designer. Some mobile scaffolds (for example, aluminium) may not be stable at a 3 to 1 height ratio.



NOTE

Mobile scaffolds must be erected by a qualified and authorised scaffolder.

Implement the following control measures when working with mobile scaffolds:

- Check that the appropriate size and capacity castors are fitted to support the total mass of the scaffold.
- Castors with adjustable legs should be used and adjusted to keep the platform level.
- Confirm that no other activities in the area will impact on or be affected by your work.
- Place a barricade around the base of the platform as both a warning and protection.
- Familiarise yourself with the rescue plan.
- Check that the platform is fitted with appropriate guardrails and has safe access.
- Use a secure internal ladder with a protected opening (for example, a hinged trap door) for access to the scaffold.
- Ensure that there are no slip or trip hazards.
- Latch the access cover before commencing work.
- Lock brakes on castors at all times (unless moving the scaffold).
- Before moving mobile scaffolds conduct a JSA and site hazard analysis to check that:
 - there are no power lines or other overhead obstructions
 - the ground is firm and level
 - no person is on the scaffold
 - no equipment and material can be dislodged from the platform
 - the ground is free of obstructions (a small obstruction may cause a mobile scaffold to overturn)
 - electrical equipment and leads can not be tangled, cut or run over.
- Never move the scaffold in adverse conditions.
- Never use vehicles to push or pull the mobile scaffold.



CAUTION

Any platform, scaffold or ladder must have clearance from overhead electrical power lines.

5.4 EDGE PROTECTION

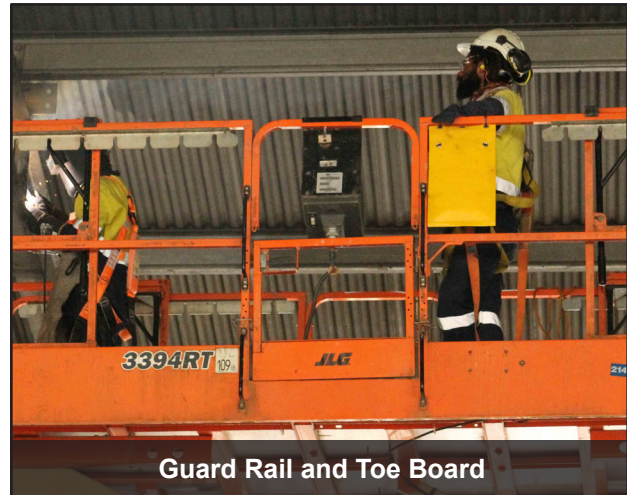


The edge of a working surface at heights must be protected. This is done by using a barrier such as a guard rail system. The edge protection system must be strong enough to stop a worker from falling through. Guard rails should be used on the edges of:

- walkways
- ramps
- landings
- stairways
- work platforms.

The edge protection must be at least 900mm high and erected parallel to the working surface.

The guard rail system has a rail between the top guard rail and the working surface to ensure that if a worker fell against the barrier, it will withstand the person's weight.



Guard Rail and Toe Board

5.4.1 TOE BOARD

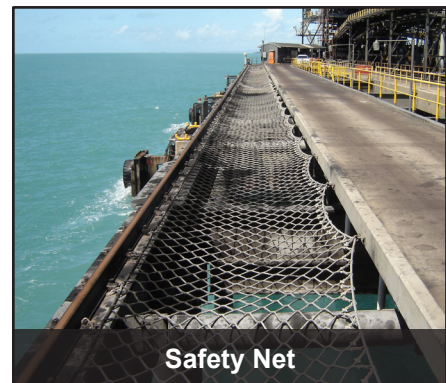
A toe board is a low, protective barrier around the platform that prevents material and equipment slipping off the edge and falling to lower levels. The toe board will also minimise the risk of workers' feet slipping over the edge. The toe board should be at least 150 mm high to be effective.

5.5 CATCH PLATFORMS AND SAFETY NETS

If it is not possible to use control measures such as personal fall arrest equipment, then physical barriers can be used as fall arrest measures.

A catch platform can be erected below a work area as a temporary construction designed to take the impact of a falling worker. This should be positioned to minimise the distance of a fall.

A safety net has a similar purpose. The net can be attached to a scaffold, under a structure or adjacent to a work area.



Safety Net



6. WORKING SAFELY AT HEIGHTS

6.1 GENERAL SAFETY REQUIREMENTS

Apply the following general safety requirements for working at heights.

- Secure hard hats by a chin strap.
- Inspect all components and equipment to perform work at height before use, throughout the task at frequent intervals, and at the completion of the task. Do not use faulty or damaged equipment.
- Identify and barricade a drop zone to protect people and prevent them from walking below the work area.
- Use tool lanyards, drop nets, tool bags, buckets and matting (where necessary) to secure loose items and tools.
- Anchor points must be approved and clearly labelled with the point's maximum rating and the number of people who can attach to that point.
- You must know your work area and recognise changing conditions. Adjust your operating technique to suit (e.g. install lighting) or discuss with your supervisor whether to suspend work until conditions improve.
- Obtain and/or refer to the appropriate documentation for the task, such as:
 - ATW and work clearances
 - Procedures and work instructions
 - Hazard identification, e.g. Take 5 and JSA.
- Display ATW and work clearances at the work site during the task.
- Check with the authorised personnel to ensure that all safety systems, including fall protection and fall arrest equipment, are installed correctly.



PPE with Hard Hat Secured


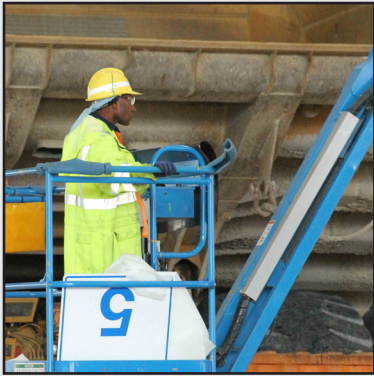
6.2 SPECIFIC REQUIREMENTS FOR WORKING AT HEIGHTS




Each site will have their own additional requirements for working safely at heights. The table highlights some examples of these requirements.






NOTE

If you are unsure about the site's specific requirements for working safely at heights, do not do the task. Talk to your supervisor immediately.

TYPE OF WORK AT HEIGHT	EXAMPLES - SPECIFIC REQUIREMENTS	
Permanent Platforms and Handrails	<ul style="list-style-type: none"> • Must be designed, engineered and installed by trained, qualified and competent personnel • Kick/toe boards installed • Top rails installed 900 - 1100mm from platform • One or more mid rails installed between top rail and platform • Handrails must not be used as anchor points for working at heights PPE 	
Elevated Work Platforms (EWP)	<ul style="list-style-type: none"> • Risk assessment must be conducted before use of EWP and consider: <ul style="list-style-type: none"> - Overhead hazards - Drop zones - Slew radius - Safe Work Load (SWL) • Must not be used when wind conditions exceed the limits specified by the equipment manufacturer (see manufacturers manual) • A pre-start inspection must be completed before use • SWL must be displayed and not exceeded • A fully compliant anchor point must be fitted • A full body harness must be worn and lanyard system attached to the anchor point at all times • Only trained, competent and authorised personnel can operate the EWP 	

<p>Scaffolding</p>	<ul style="list-style-type: none"> • All assembly, dismantling or modification of scaffolding over 4m must be conducted by licenced/ certified scaffolder • Climbing outside of scaffolding is prohibited • Must only access via approved stairways or properly installed ladders • Top rail, mid rail and kick boards installed • Inspected, approved and tagged by a competent person • Scaffold tag or 'Scaff Tag' displayed stating: <ul style="list-style-type: none"> - SWL - Date of last inspection - Name of person who conducted inspection • Scaffold without a 'Scaff Tag' is considered unsafe and not for use 	
<p>Mobile Scaffolding</p>	<ul style="list-style-type: none"> • Same requirements as Scaffolding • Must never be moved or relocated when people are in it • Castor wheels must be locked in place before using scaffolding 	
<p>Workboxes (Suspended from crane)</p>	<ul style="list-style-type: none"> • Must be approved and registered for use by appropriate authority, with a compliance plate attached • SWL must be displayed and not exceeded • Fully compliant anchor point required • Full body harness must be worn and attached to the anchor point at all times • Not to be used when the wind speed exceeds the limits specified by the equipment manufacturer (see manufacturer's manual) • A licenced and certified crane driver must operate the crane • The crane must remain stationary while personnel are in the workbox • A minimum of two people must be in the workbox, one of whom must be a licenced dogman 	

<p>Ladders</p>	<ul style="list-style-type: none"> • Industrial rated ladders only (including step ladders) to be used on site • Must be inspected before use • Ladders should be used to provide access to a work area - if work is to be performed from a ladder, a safety line and harness must be used • Metal and metal reinforced ladders must not be used in the vicinity of electrical supplies • Ladders must be secured and the base on firm, level ground • Do not stand/work above the third rung from the top of the ladder • A drop zone must be established around the ladder • Keep hands free by using a tool belt or lanyard to carry tools 	
<p>Fall Restraint (Worker uses PPE to provide tension to prevent a fall)</p>	<ul style="list-style-type: none"> • Preferred option for fall protection, as the person cannot reach a fall position • All anchor points must be rated to a 15kN load • Full body harness must be worn • Restraint attachment mechanism must be at least double action or double locking • Personnel must never work alone 	
<p>Fall Arrest (PPE is used to catch the worker in the event of a fall)</p>	<ul style="list-style-type: none"> • Must have a Rescue Plan in place for immediate rescue • Personnel must never work alone and a sentry must be in place • All personnel required to use fall arrest systems must be trained and competent in their use • Consists of full body harness, lanyard and anchor point 	

6.3 WORKPLACE ACCESS

Before moving equipment and personnel to an elevated workplace, check that access from the ground to the work area above is safe. Access requirements should take into account mechanical lifting aids for any tools and equipment that may be required.

- Check that ladders are securely fastened at the top of the working surface, placed at the correct angle out from the wall and secure at both the base and top.
- Clear all obstructions from walkways and steps.
- Provide adequate lighting to ensure visibility.
- Check that steps and handrails are clean and secure.
- Check for slip and trip hazards especially if conditions are wet.
- Check that guardrails and toe boards are secure and conform to requirements.
- Barricade unauthorised or unsafe access.



6.4 EQUIPMENT TRANSPORT

Before you can start work, the equipment may need to be transported to the work site. Mobile plant, such as EWP's and work platforms, are self-powered. You must be qualified and authorised to drive the plant. Conduct a walkaround inspection of the plant according to your site procedures and observe all safety requirements while travelling to the work site. Park the machine correctly at the work site and isolate the machine according to your site procedures.

Equipment that is not mobile, including tools, ladders, scaffolding, fall protection equipment, and barricades, must be transported to the work site.

Ensure that your work instruction or supervisor identifies the required method and allocates the transport vehicle.

- Inspect the transport route for hazards before relocating the equipment.
- Ensure that the ground conditions are suitable.
- Check that there is adequate overhead clearance.



6.5 TOOL MANAGEMENT

All equipment, materials and tools required at the work area should be lifted and lowered using a safe method as identified by the site risk assessment tool or JSA. To prevent or minimise the risk of tools or materials falling onto plant or personnel below, observe these precautions.

- Carry tools in a tool belt or side pouch or use a rope to raise the tools in a container.
- Do not climb or descend a ladder while carrying tools.
- If you are using an EWP, secure the tools and equipment before raising the platform.



6.6 MANUAL HANDLING

Incorrect lifting and handling of heavy or awkward materials is one of the most frequent causes of workplace injury. To avoid injury to your spine or limbs, use the proper technique.

Before lifting, think LITE.

L	Load	<ul style="list-style-type: none"> Consider the nature of the load - is it heavy, bulky, hard to hold? Think about the weight, shape and stability of the load. Is the load awkward, will it come apart as you move it?
I	Individual Capability	<ul style="list-style-type: none"> Age, strength, level of skill and experience all affect how much a person can safely handle. An existing health problem can increase the risk. Using kinetic (the motion of moving) handling techniques can minimise the amount of stress on the body during a lift.
T	Task	<ul style="list-style-type: none"> How much reaching, bending, stretching and twisting is involved. The position of the load relative to the handler is important in determining the degree of control and effort required (holding the load closer to the body will give greater control, picking up a load from waist height requires less effort than picking up the same load from the ground). Increased frequency and duration of the handling increases the risk.
E	Environment	<ul style="list-style-type: none"> Is the path clear of trip hazards, flat and straight? Carrying items on slopes requires greater effort than carrying on flat ground. Awkward posture (e.g. in confined or restricted spaces) increases the degree of control and effort needed and increases the risk of injury. Working at height adds another hazard to an already hazardous task. Weather conditions must be considered, e.g. carrying sheet materials in windy conditions will make the task more difficult.



NOTE

If you are in any doubt about your ability to safely lift or move a load, DO NOT do it. Get help or find another way to move the load.

7. MONITOR CONTROLS AND SAFETY MEASURES

During the work, follow the safe work practices. Monitor the controls and safety measures that have been applied and adjust them to changing circumstances. Maintain workplace safety by observing the following precautions.

- Ensure that access and egress is clear and remains safe throughout the job.
- Ensure that all personnel use the appropriate fall protection equipment throughout the task.
- Adjust the fall protection equipment as required to allow for required movement during the job.
- Ensure that the spotter remains on stand by throughout the job in case of emergency.
- Place the tools and equipment on the platform to minimise or eliminate the risk of items falling.
- Operate the tools and equipment safely.
- Check that the ground below is clear before moving any materials at height.

- Use the recommended access methods for people, tools and equipment.
- Ensure that all parts installed during the work are secure and operational before returning to the ground.
- Check controls and safety measures regularly to ensure that they are still appropriate and comply with site procedures. Ensure that:
 - barricades and signage are visible and in good condition.
 - protective devices such as guard rails, hand rails, foot walks and toe boards remain effective
 - lifting equipment has not been altered.
- Reassess and adjust or amend the controls to suit the changed conditions if required. Changed conditions may include changes in the:
 - weather
 - work place environment
 - job priorities.

8. POST OPERATIONAL TASKS

Once you have finished the work at height, check your work instructions to make sure everything has been done. When the work is finished, dismantle any safety systems that are no longer needed according to site procedures and the manufacturer's instructions.

Other post operational tasks include:

- signing off on the ATW
- cleaning, inspecting, maintaining and storing tools and equipment
- cleaning up the work area
- completing work reports and records
- attending a shift handover meeting as required.

8.1 ATW SIGN-OFF

When you have finished the working at height task you must sign off on the ATW to indicate that you have left the site safely. Sign the form and record the date and time.

The competent person in charge of the job must ensure that all workers have signed off and that the ATW is closed and filed according to site procedures.

8.2 MAINTENANCE AND INSPECTION OF EQUIPMENT

Inspect and clean tools, equipment and materials before returning them to their correct containers and storage areas.

If preventive maintenance is required on hand and power tools, perform the work if you are authorised or report it following site procedures. If the defective item has the potential to cause harm, follow site isolation procedures to prevent the item from being used, e.g. cut ropes before disposing of, so that they can not be used by mistake.

All tools on site must undergo regular testing and servicing. You can assist in this process by:

- ensuring tools are clean and ready for scheduled servicing
- delivering tools to the maintenance area when required
- collecting tools from maintenance as soon as servicing is complete
- notifying your supervisor if servicing does not occur.

8.2.1 FALL PROTECTION EQUIPMENT



NOTE

All fall prevention equipment must be checked for stress, defects or damage and reported and replaced if defects are found.

Even though fall protection equipment is inspected regularly, you are still responsible for inspecting the equipment before returning it to the storage area. If any defect is found, you must immediately withdraw the piece of equipment from service. Tag the item and report the problem to your supervisor.



DANGER

Failure to perform your post-work check of fall arrest equipment could cause injury or death.



Inspect Harness Before and After Use

8.3 STORING TOOLS AND EQUIPMENT

Correct storage increases equipment life, and is an important part of general site housekeeping. Store equipment in the designated areas so that the equipment items can be easily retrieved. The equipment must be clean and stored according to manufacturer recommendations.

Do not store defective or damaged equipment. It is your responsibility to notify your supervisor if the equipment requires repairing or needs replenishment.

In general, all tools, plant and equipment should be stored under cover in a cool dry place.



Typical Tool Storage Area

8.4 WORK AREA CLEAN-UP

When you have completed the job according to the work plan, or at the end of your shift, clean-up the work area and return it to a safe state. Follow these guidelines.

- Clear the site of debris, rocks and spillages as required.
- Remove signs and barricades as approved by your supervisor.
- Ensure that there is adequate access into the work site for the next crew.
- Dispose of, or recycle, materials according to site procedures.
- Before leaving the work site, check that there are no hazards and that the area is safe.

8.4.1 WASTE MANAGEMENT

Most work sites use the concept of reduce, reuse and recycle to minimise the amount of waste requiring disposal. The following are some ideas to help you to manage waste.

- Identify and separate recyclable materials.
- Recycle waste products such as paper, glass, aluminium, cardboard, concrete and steel.
- Waste receptacles should be clearly marked for the type of waste they contain.
- Waste controls should be inspected, documented and reviewed regularly.
- Storage must be appropriate to the type of waste, for example bunding and containers provided away from watercourses.



8.5 WORK REPORTS

Fill out log books, daily activity sheets or timesheets and submit a full report on the work performed. Where required also report the condition of the machine. This will help to prevent breakdowns and rectify safety issues. Prepare the report as soon as possible so that all facts are clear. Follow the site reporting procedures when submitting the report. A work report or shift handover should be comprehensive and include some or all of the following information:

- machine defects and maintenance requirements
- faults such as:
 - power supply stoppages and connection problems
 - water supply problems
 - ground problems
- environmental issues
- location of tools and other equipment
- summary of work done and deviations to the work plan.

9. SUMMARY

This training resource has provided information on your obligations for working safely at heights. Ensure that you are well prepared for conducting your duties, and follow the site safe work procedures and manufacturer instructions when carrying out tasks involving working at heights.

10. TERMS AND ACRONYMS

The following are terms commonly used on some sites. Space is provided for you to add terms and acronyms common to your site.

Term	Meaning
Anchor Point (Anchorage)	An engineered addition to or existing part of a building or structure to which a person is connected during fall arrest, work positioning or fall restraint, that has appropriate strength and position to protect the person in the event of a fall or against a fall occurring, including a static line.
Certified Work at Height Person	A person who has successfully completed a competency-based training program in work at height.
Edge Protection	A barrier to prevent a person falling that is erected along the edge of a building or structure, around an opening or around a raised platform.
Fall Arrest	Person works with no protection against a fall. A device or system (harness connected to an anchor point directly or via a lanyard) designed to arrest a fall when it occurs.
Fall Restraint	Person works with restraint protection. The device or system (harness connected to an anchor point directly or via a fixed-length or adjustable-length lanyard) designed to prevent movement to a point where a fall can occur.
Fragile or Brittle Roof	Any building roof material that if tested would fail an impact resistance level test. Ceiling material is considered fragile.
Job Safety Analysis (JSA)	A risk management process that focuses on job tasks to identify hazards before they occur, assess the risk of the hazards and determine suitable controls to manage the risks.
Mobile Elevated Work Platform (EWP)	A telescopic device or other articulated device used to position people, materials and equipment above or below the base support surface (includes scissor lift, cherry picker, integrated tool carrier basket, boom lifts, travel tower).
Man Box (Lift Box, Man Cage)	A light-duty work stage, connected to a crane hook by slings, designed to carry people to work at a remote location.
Authority to Work (ATW)	An Authority to Work is required for certain jobs that have exceptionally high risk potential, such as hot work, digging/excavating/penetrating, working in a confined space or at height.

Term	Meaning
Qualified and Authorised Person	A person who has successfully completed a competency based training program workplace competence assessment.
Red Zone	An exclusion area demarcated within 2 metres of an unprotected edge where there is a work at height fall danger.
Scaffold (Temporary Platform)	A fabricated platform of structural steel or aluminium involving tubes, couplers, frames and modules, which may be attached to a building or structure or free-standing.
Safe Work Procedures (SWP)	Safe Work Procedures (SWP) are a legal requirement and outline the workplace method and processes for carrying out tasks safely and in an environmentally sustainable way. They are easy to understand, step-by-step instructions on how to perform the task.
Work at Height	Work at height involves potential for a person to fall 1.8m or more metres or for a fall of less than 1.8 metres to cause serious injury, including work within 2 metres of an edge where a fall could occur. Work that is fully protected by standard platforms, handrails, building structure or other approved edge protection is not 'work at height'.

Attachment 3

Work at height risk assessment checklist

	Hazard checklist	Examples of the Hazard / Risk	Y/N ✓	Control measures (using Hierarchy of Controls)
1.	Is there potential for people working below to be injured as a result of your activities?	<ul style="list-style-type: none"> ▪ Falling tools, materials, equipment? ▪ Falling objects bouncing off pipes etc? ▪ Hot slag/sparks falling onto others? 		
2.	Correct work design	<ul style="list-style-type: none"> ▪ Pendulum affect ▪ Incorrect choice, use of harnesses/ lanyards 		
3.	Portable or movable elevated work platform & cages.	<ul style="list-style-type: none"> ▪ Unqualified personnel operating EWP? ▪ Could the EWP move unexpectedly? ▪ Could mobile plant collide with EWP? 		
4.	Portable ladders	<ul style="list-style-type: none"> ▪ Is a ladder the best choice for the task (used mainly for access, not suitable for lengthy or heavy work)? ▪ Has the right type of ladder been selected for this task (fibreglass/electrical, extension, step etc)? ▪ Has the ladder been inspected and found to be in good working order? 		
5.	Exiting from an EWP	<ul style="list-style-type: none"> ▪ Have all other options been considered? ▪ Can the EWP be landed on the structure or secured to an appropriate anchor? ▪ Is the structure capable of supporting the EWP basket, persons and intended load? ▪ Is there a designated anchor point for attachment of the fall protection equipment? ▪ Can the base controls be tagged to prevent unauthorised interference? ▪ Is there an equivalent EWP available to rescue, or a contingency rescue plan in place? ▪ Has the EWP logbook been filled out and the pre-start check completed? 		
6.	Repeated detaching & reattaching the lanyard?	<ul style="list-style-type: none"> ▪ Potential to be disconnected from anchor point? ▪ Is a dual lanyard system required to ensure 100% attachment at all times? 		

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	Hazard checklist	Examples of the Hazard / Risk	Y/N ✓	Control measures (using Hierarchy of Controls)
7.	Fall restraint & fall arrest:- Ineffective Rescue	<ul style="list-style-type: none"> ▪ Is there an emergency rescue plan in place? (attach) ▪ Does the sentry know what to do? ▪ Ineffective, non existent communications between the sentry, worker & ERC ▪ Nominated rescue people & equipment not readily available/accessible? 		
8.	Fall restraint & fall arrest:- Equipment	<ul style="list-style-type: none"> ▪ Have all other levels in the Hierarchy of Controls been considered? ▪ Is working in a restraint / arrest mode the most practical way of completing the task? ▪ Has the work method included a safe means of access / egress for the work location? ▪ Has the equipment to be used been inspected (tag in date)? ▪ Is the free-fall clearance distance adequate (minimum 6.6m for a 2m lanyard)? 		
9.	Harness/Lanyard use, fall restraint & fall arrest:- Anchor point failure	<ul style="list-style-type: none"> ▪ Is there a suitable anchor point for this work (location, strength etc)? ▪ Lack structural integrity ▪ Damaged anchor point ▪ Poor selection of anchor point 		
10.	Hazards associated with gaining access to the work area.	<ul style="list-style-type: none"> ▪ Is there risk of slips, trips or falls? ▪ Is there risk of emergency response crews being unduly delayed in an emergency 		
11.	Tools & Equipment	<ul style="list-style-type: none"> ▪ What are the hazards associated with introducing tools and equipment into the work area? 		
12.	Manual handling	<ul style="list-style-type: none"> ▪ What are the hazards associated with manual handling equipment/materials into the work area? 		
13.	Scaffolding hazards:- Lack of structural integrity for the required load	<ul style="list-style-type: none"> ▪ Is the scaffold in the correct place for the task? ▪ Is the scafftag in place? ▪ Is the scafftag current? (max 28 days between inspections) ▪ Has a Barricading Plan been completed & followed? ▪ What duty is the scaffolding required to be (light, medium, heavy)? ▪ Do the scaffolders have the appropriate certification? ▪ The scope is confirmed and will not change, potentially overloading the scaffold? 		

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Hazard checklist	Examples of the Hazard / Risk	Y/N ✓	Control measures (using Hierarchy of Controls)
14. What hazards have been identified if Working on Roofs?	<ul style="list-style-type: none"> ▪ Brittle, unsound roof? ▪ Steep roof? ▪ Poor access? ▪ Have warning signs and barricades been erected at every entrance below the work area? ▪ Have fragile areas been identified and warning signs/barricades put in place? ▪ If possible, have fragile areas been safety meshed/covered? ▪ Has the structural integrity of the roof/fragile surface been confirmed by the Responsible Engineer? ▪ Have other options been considered that negate having to work over the fragile surface/roof? ▪ If possible, can persons be prevented from entering a fragile area (e.g. fall restraint equipment)? 		
15. Falling objects	<ul style="list-style-type: none"> ▪ Has the risk of falling tools/equipment been assessed and preventative measures put in place (lanyards, tool belts etc)? ▪ Is the area below appropriately barricaded off and sign posted "Men Working Above"? ▪ Is the area above appropriately barricaded off and sign posted "Men Working Below"? 		
16. Creating an Opening/Hole (removing flooring or guardrails)	<ul style="list-style-type: none"> ▪ Has access by other people been considered and controlled (barricades, signage etc)? ▪ Is suitable restraint equipment and anchor points available? ▪ Is a suitable temporary cover with a sign required for the hole? 		
17. Exposure to extreme weather conditions?	<ul style="list-style-type: none"> ▪ Sunlight & heat? ▪ Strong or gusty winds and or dust? ▪ Rain? ▪ Strong glare? ▪ Lightning? 		
18. Removal/Installing Floor panelling (check plate and or grid mesh panels)	<ul style="list-style-type: none"> ▪ Is there potential for people unaware of hazard to gain access to area and fall through gaps or unfastened floor panelling? ▪ Is the potential for persons installing/removing flooring to fall? ▪ Is there potential for objects or equipment to fall and injure others or damage equipment? 		

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BARRICADE PLAN

1. Do you need permanent, semi permanent or temporary barricading?
 2. Where's the safest entry route (through the barricading)?
 3. Account for possibility of falling objects bouncing off beams & infrastructure
 4. Ensure vehicular traffic is kept away from scaffolding
 5. Ensure adequate signage and tagging is in place

RESCUE PLAN

1.	Means of Rescue	<ul style="list-style-type: none"> ▪ Self Rescue? ▪ Rope Rescue? ▪ Elevated Work Platform? ▪ Other? 	Resources Required: <i>Identify the People, ERC, Equipment required</i>	
2.	Readiness of Rescue Resources	<ul style="list-style-type: none"> ▪ Have all the people mentioned in the rescue plan confirmed that they are available in the event of an emergency? ▪ Do they know the nature & location of the possible rescue? ▪ Is the nominated equipment readily available and accessible? 	Yes or No?	✓
3.	Have all these people read and understood their role in the rescue plan?	<ul style="list-style-type: none"> ▪ Work Team Members? ▪ Sentry? ▪ Rescue Personnel? 	Yes or No?	✓

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Work at Height Sentry Checklist and Duties

To be completed by the sentry prior to assuming responsibility as the Work at Height Sentry.

I have read and understood:

- Work at Height Permit**
- Risk Assessment**
- Job Safety Analysis / Safe Work Procedure**
- Hot Work or other relevant permits** (where applicable)

I have read and fully understand the **Rescue Plan**

- My means of communication are _____
- The emergency phone number is _____
- The emergency radio channel is _____
- The safest entry route for the Emergency Response team is via _____

I have checked the following equipment prior to task starting.

- Communications for the task are in place and working.
- All signs and barricades are in place.

I am familiar with my duties and will ensure the following are in place (tick to show compliance).

- I hold a valid current OTML Authority to Operate – Work at Height card.
- I will stop work at any time if necessary when safety is at risk.
- I will understand and execute my role in the rescue plan.
- I will restrict any activity that may affect the health and safety of the people working at height.
- No person shall work at heights without complying with and signing onto the
 - Work at Height Permit
 - Job Safety Analysis
 - Any other required permits eg hot work.
 - Completing a Take 5
- I will remain in communication with those working at height.
- I will monitor all equipment, where practical, being used by those working at height.
- I will not leave the sentry position unless relieved by a competent person who has completed their checklist and understands the current requirements.
- I will ensure that the barricades, if required, are kept in place whenever people are working at height.
- In the event of an emergency I will remain at my post until relieved.

Signature: Work at Height Sentry		Date
Signature: Team Leader		Date

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Attachment 6

Work at Height PPE Inspection form

Work at Height PPE inspection

Department		PPE bag number	
Area		Date	

A = Acceptable U = Unacceptable N/A = Not applicable

Component	Condition / Fault to be checked (Please ✓)	A	U	N/A
Rope and webbing	Cuts or tears			
	Abrasion or fraying			
	UV damage			
	Loose stitching			
	Stretching			
Hooks, Karabiners and Rope Grabs	Damage due to contact with heat, corrosives, or solvents			
	Distortion of hook or latch			
	Cracks or forging folds			
	Wear at swivels and latch pivot pin.			
	Free movement of the latch over its full travel			
	Broken, weak or misplaced latch springs			
	Corrosion			
Sewing	Gate and screw closes fully and freely			
	Broken, cut or worn threads			
	Damage or weakening of threads due to contact with heat, solvents or corrosives			
	Abrasion damage			
	Unauthorised repairs/modifications			
Terminations	Deterioration due to ultraviolet exposure			
	Thimble eyes intact			
	Excessive movement of thimble eyes			
Buckles and Adjusters	Cracks and forging laps			
	Bent tongues (Distortion)			
	Corrosion			
	Open rollers			
Labelling	Date of Manufacture visible			
	Australian Standards Serial/Batch No visible			
	Manufacturer Name visible			
	Designation/type of device visible			
Energy Absorber	Energy Absorber intact			

Comments

Lanyard fit for use	Yes		No
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Equipment not fit for use shall be removed from service

Inspector's name	Signature

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Attachment 7

Guidance – PPE pre-use check

Component	Condition / fault to be checked	
Rope or webbing including anchorage lines for Type 2/3 devices	Cuts Abrasions or fraying Stretching Damage due to contact with heat, corrosives or solvents Excessive dirt or grease impregnation Anchorage of the anchorage line to the anchorage point (Type 1 devices) Anchorage of the rope end to the drum when the rope is fully extended (Type 2/3 devices)	
Fall-arrest device body	Mounting ring	Physical damage or wear, especially at any pivot points Cracks, especially in corners Mounting security
	Body	Physical damage such as significant dents, distortion or corrosion Presence of foreign bodies such as small stones within the body (to be checked without dismantling) Loose or missing screws, nuts or similar objects (external check only) Position of the clutch compression indicator button (fitted only to rewind drums with steel rope)
	Fall-arrest indicator (if fitted)	Signs of activation
	Correct-use labels and service label or tag	Presence and legibility
Locking mechanism and rope guides	Excessive wear or ridging on externally visible rope guides Secure locking and holding of rope-locking mechanisms when the rope is given a sharp tug Free running of rope through the anchorage with no tendency to stick or bind, and on rewind drum anchorages, complete rewinding of the rope without loss of tension	
Hardware	Condition and locking action of any associated snap hooks or links	

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Webbing	<p>Cuts or tears</p> <p>Abrasion damage especially where there is contact with hardware</p> <p>Excessive stretching</p> <p>Damage due to contact with heat, corrosives or solvents</p> <p>Deterioration due to rotting, mildew or ultraviolet exposure</p>
Snap hooks and karabiners	<p>Distortion of hook or latch</p> <p>Cracks or forging folds</p> <p>Wear at swivels and latch pivot pin</p> <p>Open rollers</p> <p>Free movement of the latch over its full travel</p> <p>Broken, weak or misplaced latch springs (compare if possible with a new snap hook)</p> <p>Free from dirt or other obstructions, e.g. rust</p>
D-rings	<p>Excessive “vertical” movement of the straight portion of the D-ring at its attachment point on to the belt, so that the corners between the straight and curved sections of the D become completely exposed</p> <p>NOTE: Excessive vertical movement of the ring in its mounting can allow the nose of larger snap hooks to become lodged behind the straight portion of the D, in which position the snap hook can often accidentally “roll out” of the D under load</p> <p>Cracks, especially at the intersection of the straight and curved portions</p> <p>Distortions or other physical damage of the D-ring</p> <p>Excessive loss of cross-section due to wear</p>
Buckles and adjusters	<p>Distortion or other physical damage</p> <p>Cracks and forging laps where applicable</p> <p>Bent tongues</p> <p>Open rollers</p>
Sewing	<p>Broken, cut or worn threads</p> <p>Damage or weakening of threads due to contact with heat, corrosives, solvents or mildew</p>
Ropes	<p>Cuts</p> <p>Abrasions or fraying</p> <p>Stretching</p> <p>Damage due to contact with heat, corrosives, solvents etc</p> <p>Deterioration due to ultraviolet light or mildew</p>
Chains	<p>Physical damage</p> <p>Security of attachments to snap hooks, rings and similar components</p>

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