INTEGRAL SKILLS

SCAFFOLDING - BASIC

CPCCLSF2001 Licence to erect, alter and dismantle scaffolding basic level

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MODIFICATION HISTORY

Version	Date	Nature of Amendment
1	13 Feb 20	Creation
2	24 May 22	Updated Unit of Competency

Table of Contents

1.1 Introduction

These training materials are based on the National High Risk Licence Unit of Competency **CPCCLSF2001 Licence to Erect, Alter and Dismantle Scaffolding Basic Level.**

You will learn about:

- Planning out your work.
- Selecting and inspecting equipment.
- Setting up for the task.
- Erecting and dismantling scaffolding and other equipment.

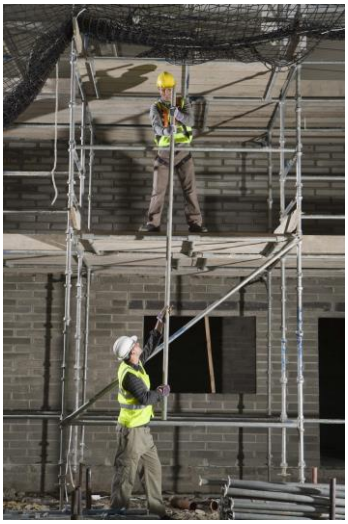
1.1.1 When is a Scaffold Licence Needed?

A scaffold licence is needed where working platforms are at a height where a person or object could fall more than 4 metres.

1.1.2 What Types of Work can you do with a Basic Scaffolding Licence?

A person with a basic scaffolding licence is legally allowed to carry out the following tasks:

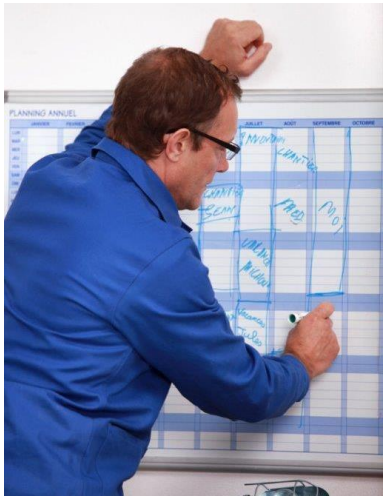
- Erection, alteration and dismantling of modular and prefabricated scaffolds.
- Erection of cantilevered materials hoists with a maximum rated capacity of 500 kilograms.
- Use of ropes and gin wheels.
- Installation of safety nets.
- Use of static lines.
- Erection of bracket scaffolds (tank and formwork).



While a person with a basic level scaffolding licence is not allowed to erect tube and coupler or more advanced scaffolds (hung and suspended), they are allowed to use tube and coupler components for:

- Ties.
- Tying scaffolds together at corners.
- Handrails.
- Security of toeboards or kickboards.
- Installation and security of gin wheels.

1.1.3 High Risk Work Licence Requirements



Once you pass your assessment you will have **60 days** to apply for your licence.

You must renew your licence within 12 months of its expiry otherwise:

- Your licence can't be renewed.
- You need to repeat the course and re-apply for your licence.
- You need to enrol in the course again and be supervised by somebody who has a current licence for the same class.

You can still do high risk work without a licence as long as:

- You are enrolled in a high risk course for the class, and
- You are being supervised by somebody who has a licence for the same class.

Any licensed worker must take reasonable steps to make sure the way they work does not impact on the safety of themselves or any other worker. This is their legal duty of care. Failing to work safely can result in the health and safety regulator:

- Suspending or cancelling your licence.
- Refusing to renew your licence.
- Ordering that you are reassessed to ensure you are competent.

Your employer might ask you for evidence that you have a high risk licence before you start any high risk work. You can show them:

- Your licence.
- Proof from the training company that you have passed your assessment.
- Proof that you are currently completing a course for high risk work.

1.2 Scaffolding Basics

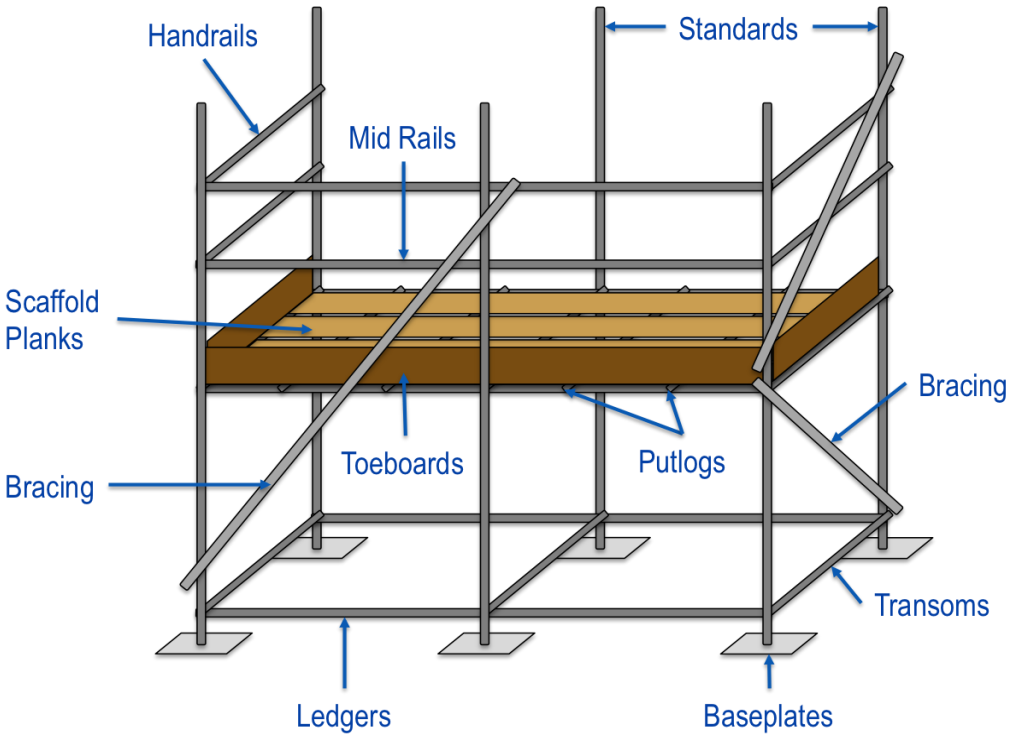
There are many different types of scaffolds that can be erected (depending on your licence level).

These scaffolds are made up of a number of components.

It is important that you have an understanding of what each of these components are called (especially when interpreting a scaffolding plan).

1.2.1 Parts of a Scaffold

The diagram below outlines some of the basic components of a scaffold structure.

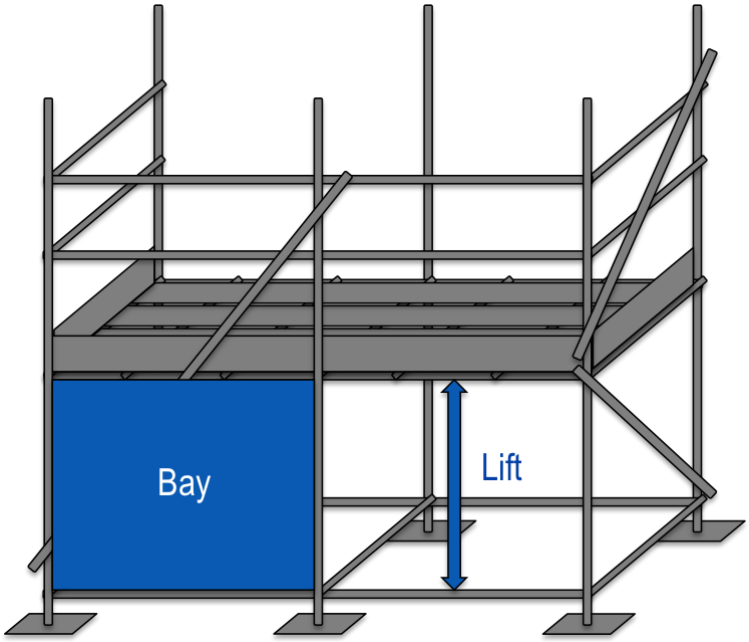


1.2.2 Bays and Lifts

A **BAY** is the section of a scaffold created by four standards, ledgers and transoms placed at right angles.

A **LIFT** is the vertical distance between two ledgers.

The first lift is called a **BASE LIFT**.



1.2.3 Scaffold Duty

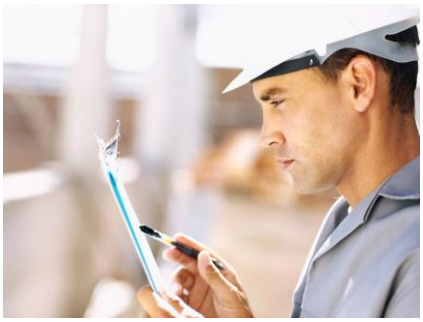
Scaffolds have different size requirements and rated capacities according to their duty:

Duty	Minimum Working Platform Width	Maximum Load Allowed on Platform
Light duty	450mm	225kg per bay
Medium duty	675mm	450kg per bay
Heavy duty	900mm	675kg per bay

The configuration and the parts that make it up generally determine the duty of a scaffold.

You need to make sure the scaffold you intend to erect will be the correct duty depending on the requirements of the job, and the types of loads that will be resting on the scaffold while it is erected.

You should check the manufacturer's or supplier's specifications for the exact rated capacity of the working platforms of a scaffold at the planning stage to make sure it will be able to support the weight of any workers, tools, equipment and materials required for the job.



1.2.4 Types of Scaffolding

When selecting a scaffold, the specified building's design, shape, and location should be considered. The scaffold's ability to adapt to the structure's contours should also be taken into account.

In addition, the purpose for which the scaffold will be used should be a factor in making the decision about which type of scaffold should be selected.

You will need to decide what type of scaffold construction is the most appropriate for the tasks you need to perform.

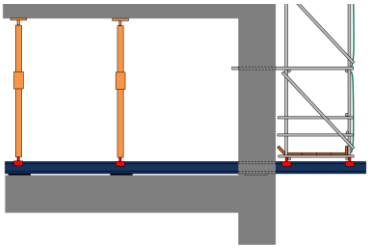
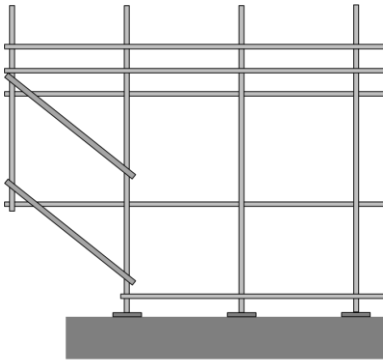
1.2.4.1 Basic Level Scaffolds

The following table outlines the main types of basic level scaffolds.

Name	Explanation	Example
Mobile Scaffold	A **Mobile Scaffold** is an independent, free-standing, movable scaffold mounted on castors. It is useful for maintenance where multiple points must be accessed. Castors for mobile scaffolds need to have wheel locks. Castors for a mobile scaffold cannot have a pneumatic tyre. Plan bracing is needed in a mobile scaffold to stop the scaffold from twisting when it is moved.	
Birdcage Scaffold	A **Birdcage Scaffold** consists of more than two rows of standards, connected by ledgers and transoms. It is intended for use on one level only, and is commonly used for working on a ceiling.	
Modular or Frame Scaffolding	A **Modular or Frame Scaffolding** (steel, fibreglass or aluminium) is assembled from prefabricated frames, braces and accessories. Free-standing modular scaffolds can be built to a height of 3 times the minimum base width.	
Bracket Scaffold	A **Bracket Scaffold** is a scaffold that has a platform carried on frames attached to or supported by a permanent or temporary construction. Bracket scaffolds are often used for maintenance work.	
Tower Scaffold	A **Tower Scaffold** can be a mobile, modular, or tube and coupler variety. Tower scaffolds are generally fitted with a single work platform with ladder access and have only 2 rows of standards. Tower scaffolds are popular where there is a limited amount of space to erect a scaffold. Unless otherwise stated by the manufacturer, a light duty aluminium tower scaffold should not exceed a height of 9 metres.	

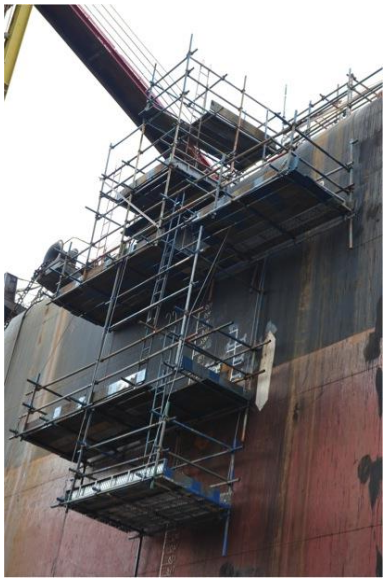
1.2.4.2 Intermediate Level Scaffolds

The following table outlines the main types of intermediate level scaffolds.

Name	Explanation	Example
Tube and Coupler	A Tube and Coupler Scaffold is erected using scaffold tubes connected with couplers. These are useful where the scaffold must be erected in a specific shape to match a structure, or prefabricated scaffolds will not meet the requirements of the task.	
Single Pole Scaffold	A Single Pole Scaffold contains a single row of standards, and is completely dependent on the structure it is placed against for support. A single pole scaffold is often used for bricklaying or other masonry work.	
Cantilever Scaffold	A Cantilever Scaffold is a scaffold that is supported by cantilevered load-bearing members. It is commonly used where surface conditions are unacceptable, or the required height of the work platform makes conventional scaffolds unsuitable.	
Spurred Scaffold	A Spurred Scaffold is partially supported by inclined load-bearing members called 'spurs'. They are used where there is insufficient load bearing capability for standards, or where the scaffold must be configured in a way that does not have all standards resting on the ground/supporting structure. An example of this is a scaffold that is built around and above an entryway.	

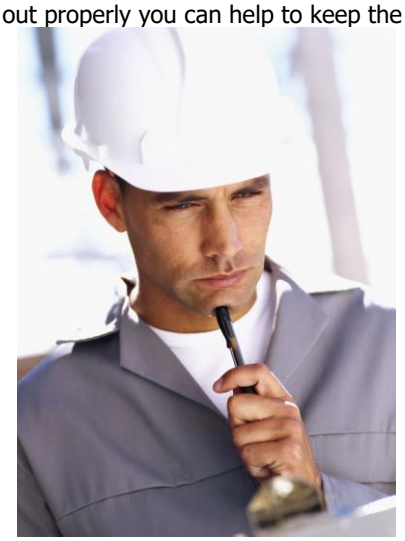
1.2.4.3 Advanced Level Scaffolds

The following table outlines the main types of advanced level scaffolds.

Name	Explanation	Example
Suspended or Swing Stage Scaffold	A Suspended or Swing Stage Scaffold can be either raised or lowered, as it has a suspended platform. These types of scaffolds are commonly associated with window washers.	
Hung Scaffolds	Hung Scaffolds are temporary structures suspended by tubes, wire ropes or chains from a permanent structure and are used to access areas that would otherwise be difficult or unsafe to access by other means. They are usually made from steel, aluminium or timber components. Hung scaffolds CANNOT be raised or lowered when in use. Some can, however, travel horizontally with the aid of girder trolleys or mobile suspension rigs.	

1.3 Plan Job

Careful planning is the first step in completing a task safely. By making sure you are aware of all of the requirements of the job, and the steps required to carry it out properly you can help to keep the worksite and workers as safe as possible.



1.3.1 Work Health and Safety Requirements

Work Health and Safety is defined as laws and guidelines to help keep your workplace safe.

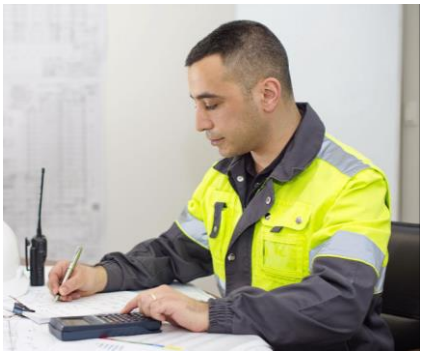
These can be broken down into four main types:

Law	Explanation
Acts	Laws to protect the health, safety and welfare of people at work.
Regulations	Gives more details or information on particular parts of the Act.
Codes of Practice	Are practical instructions on how to meet the terms of the Law.
Australian Standards	Give you the minimum levels of performance or quality for a hazard, work process or product. The Australian Standards for scaffolding are AS/NZS4576 and AS1576. This Australian Standard outlines the performance requirements and methods of structural and general design for access and working scaffolds. In general these requirements also apply to other types of working scaffolds. The purpose of a working scaffold is to provide a safe place of work with safe access suitable for the work being done. The Australian Standard sets out the structural and operational requirements for working scaffolds.

1.3.2 Assess the Task and Gather Site Information

The first thing to do when planning a task is to work out exactly what it is you need to do. Simply put, you will need to assess the task.

To do this, you will need to collect all the information you require about the tasks, personnel, local site conditions and equipment.



Site information may include:

- Ground conditions and suitability.
- Hazards that exist on site or that are associated with the completion of the task.
- Access and egress (entry and exit) to the work area.
- Equipment that is being used on site.

You can find task and site information in documentation such as:

- Safe Work Method Statements (SWMS).
- Site-specific Job Safety Environmental Analyses (JSEA).
- Task plans.
- Manufacturer's specifications.

Make sure you can accurately interpret and understand structural charts and plans. They will help you decide which scaffolding equipment and tools you will need and what methods and procedures you will use throughout the task.

1.3.1.1 Identify Forces and Loads

A 'load' is any type of force exerted on an object. It is important to understand the relevant forces and loads that are associated with the scaffolding work you will be doing.

Forces and loads apply to scaffolds and the structures they are attached to.

When constructing a scaffold there are a range of forces and loads you may need to consider.

- **Dead Loads** – The weight of a scaffold or hoist and its components before it is loaded.
- **Live Loads** – The weight of the equipment and personnel on the scaffold (in each bay).
- **Static Load** – A load that is not moving (consistent load).
- **Dynamic Load** – Force made by a moving load on a resisting structure or component.
- **Wind Load** – The force made by wind on a structure or its components.
- **Environmental Load** – The weight of environmental factors such as water, dust and debris that may be on the scaffold.

Each standard is designed to hold at least 1/3 of the duty live load per bay.

For example a medium duty scaffold that can hold 450kg per bay requires each standard to hold at least 150kg. If the standard is connected to more than one bays, it must be able to hold 150kg for each bay it is connected to.

The maximum load that can be placed on a right-angle coupler is 630kg (AS/NZS 4576) unless otherwise specified by the manufacturer.

It is important to know the weight of any material you place on a scaffold. If you place too much weight on a scaffold it may collapse.

Some loads may have the weight marked on them or they may come with a consignment note or weighbridge certificate.

You may have to calculate the weight of a load using appropriate mathematical procedures and formulas. Remember to add the weight of pallets, boxes and drums when lifting loads.

The weights of some common materials can be found in the table below.

Material	Weight
Cubic metre of concrete	2.4 metric tonnes
Cubic metre of water	1 metric tonne
Cubic metre of earth or clay	1.9 metric tonnes
Cubic metre of steel	7.84 metric tonnes
1000 common bricks	4 metric tonnes

There may be other factors that you need to consider when planning out the task including:

- Plant and equipment required for the task.
- Task plans.
- Weights or any other relevant information that will allow you to plan out the job.
- Load the scaffold needs to support.
- Height and width of the scaffold.
- Availability of equipment.
- Induction and training.
- Safe work method statements.
- Risk assessments.

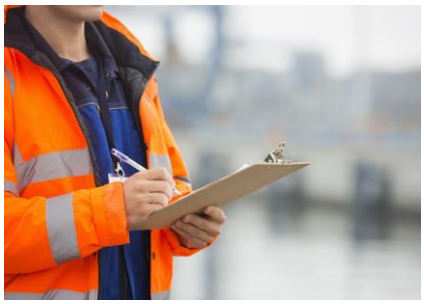
1.3.3 Safe Work Method Statements

A Safe Work Method Statement (SWMS) details how specific hazards and risks, related to the task being completed, will be managed and is developed by the employer for their workers.

SWMS fulfil a number of objectives:

- They outline a safe method of work for a specific job.
- They provide an induction document that workers must read and understand before starting the job.
- They assist in meeting legal responsibilities for the risk management process, hazard identification, risk assessment and risk control.
- They assist in effectively coordinating the work, the materials required, the time required and the people involved to achieve a safe and efficient outcome.
- They are a quality assurance tool.

1.3.3.1 Completing a SWMS



To complete a SWMS:

1. Break the job down into logical steps taking into consideration what is required to be achieved by the task.
2. Against each step, identify the workplace hazards in this activity i.e. the ways that a person (or plant) could be injured or harmed (or damaged) during each step.
3. Decide on measures required to mitigate hazards i.e. what could be done to make the job safer and prevent injuries or harm that may occur.
4. Identify roles and responsibilities for actions and outcomes to make sure risk/hazard controls are carried out under supervision.
5. Ensure the SWMS is fully understood by all personnel prior to commencing the task.

The Safe Work Method Statement must be available for inspection at any given time.

Safe Work Method Statements may also be referred to as Safe Work Procedures (SWP) or Job Safety Analysis (JSA).

A sample SWMS is available in Appendix A.

1.4 Identify and Control Hazards

HAZARDS CREATE RISK. CHECK FOR HAZARDS.

A **RISK** is the chance of a hazard hurting you or somebody else or causing some damage.

A **HAZARD** is the thing or situation that causes injury, harm or damage.

If you can remove or at least control a **HAZARD** you can reduce the **RISK** involved.

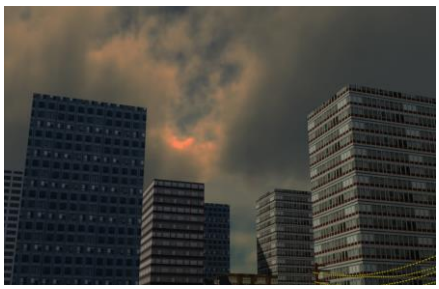
Part of your job is to look around to see if you can find any hazards before you start.

A good tip is to check:

- **Above head height** – remember that scaffolding may be above your head.
- **At eye level** – look around to see if there is anything in the way of where you want to place the scaffold.
- **On the ground (and below)** – Have a look at the ground conditions - will it support the weight of the scaffold and load?

Common workplace hazards include:

- Ground conditions:
  - Underground services.
  - Non-weight bearing surfaces.
  - Recent excavations.
  - Soil conditions (e.g. recently filled trenches).
- Poor lighting.
- Overhead hazards:
  - Power lines.
  - Overhead service lines.
  - Obstructions.
- Surrounding structures:
  - Buildings.
  - Obstructions.
  - Facilities
  - Trees
- Traffic:
  - Pedestrians.
  - Personnel.
  - Vehicles.
  - Mobile plant.
- Weather:
  - Wind.
  - Lightning.
  - Rain.
- Workplace-specific hazards:
  - Dangerous materials.
  - Falling objects.
  - Falling from heights.



Once a hazard has been identified you should talk to:

- Safety officers.
- Site engineers (where applicable).
- Supervisors.
- Colleagues.
- Managers who are authorised to take responsibility for the workplace or operations.

It is important to communicate with workplace personnel and safety officers before starting on a worksite to ensure that the scaffold team is aware of any workplace policies, site-specific procedures and hazards.

1.4.1 Working Near Power Lines

Working near power lines can be dangerous if you are not careful.

It is very important that you know the safe operating distances for different types of power lines and the steps you must take if your job needs you to work closer than the safe distances.

Generally, if you need to work closer than the safe work distance you must:

- Contact the local electrical authority for permission to work closer (this is called an exemption).
- Have the power lines shut off. If this is not possible then have the power lines insulated.
- Use a spotter (depending on local laws and rules).

Distances are different depending on the state or territory you are working in and the voltage of the power lines. You should check with the local electrical authority for information and advice to find out the voltage of power lines in your work area.

Queensland

The Queensland Electrical Safety Regulation breaks down the distances in detail. Exclusion zones are broken down not only by size of power line but also by the competency level of the operator. This means that the requirements should be clarified with the electrical authority before work commences even if the distance appears to be outside the zones.

The following minimum distances are provided as guidance:

Power Line Type	Distance
Up to 132kV	3.0m
132kV up to 330kV	6.0m
330kV and above	8.0m

New South Wales

In New South Wales, for anyone who is not accredited, equipment operation may not be any closer than the following distances to power lines:

Power Line Type	Distance
Up to and including 132kV	3.0m
Above 132kV up to and including 330kV	6.0m
Above 330kV	8.0m

To work closer than these distances requires authority from the relevant electrical authority and adherence to cl.64(2)(e) of the regulations.

Australian Capital Territory

In the ACT mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Power Line Type	Distance
Less than 33kv	4.0m
33kV or more (transmission lines)	5.0m

Victoria

In Victoria the Framework for Undertaking Work Near Overhead and Underground Assets states that equipment must not be closer than the following distances to power lines:

Power Line Type	Distance
Distribution lines up to and including 66kV (power poles)	6.4m (or 3.0m with a qualified spotter)
Transmission lines greater than 66kV (towers)	10m (or 8m with a qualified spotter)

Tasmania

In Tasmania equipment must not be closer than the following distances to power lines:

Power Line Type	Distance
Up to and including 133kV (poles)	6.4m (or 3m with a safety observer)
Greater than 133kV (towers)	10m (or 8m with a safety observer)

South Australia

In South Australia mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Power Line Type	Distance
Up to 132kv (including 132kv poles)	6.4m (or 3.0m with a spotter)
132kv or more (including 132kv towers)	10.0m (or 8.0m with a spotter)

Western Australia

In Western Australia this falls under Regulation 3.64 from the OSH Regulations and states the following as the minimum distances:

Power Line Type	Distance
Up to 1kV (insulated)	0.5m
Up to 1kV (uninsulated)	1.0m
Above 1kV and up to 33kV	3.0m
Above 33kV	6.0m

Northern Territory

In the Northern Territory equipment must not be closer than the following distances to power lines:

Power Line Type	Distance
Up to and including 132kV (distribution lines)	6.4m (or 3m with a spotter)
Greater than 132kV (transmission lines)	10m (or 8m with a spotter)

1.4.1.1 Tiger Tails

Tiger tails are used to clearly show the location of overhead power lines. Tiger tails **DO NOT** insulate the power lines so exclusion zones and safe operating distances must still be used, even when tiger tails are in use.

1.4.2 Risk Assessment

Once you have identified the hazards on site or related to the work you will be doing you need to assess their risk level.

Risk levels are worked out by looking at 2 factors:

Consequence	How bad will it be if the hazard causes harm?
Likelihood	What is the chance of the hazard causing harm?

You can use a table like the one shown here to work out the risk level:

	Consequence				
Likelihood	**1. Insignificant**	**2. Minor** First Aid Required	**3. Moderate** Medical Attention and Time Off Work	**4. Major** Long Term Illness or Serious Injury	**5. Catastrophic** Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	Extreme	Extreme

For example, a hazard that has a **Major** consequence and is **Almost Certain** to occur has a risk level of **Extreme**.

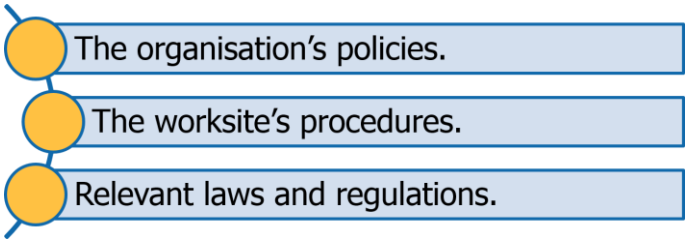
	Consequence				
Likelihood	**1. Insignificant**	**2. Minor** First Aid Required	**3. Moderate** Medical Attention and Time Off Work	**4. Major** Long Term Illness or Serious Injury	**5. Catastrophic** Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	**Extreme**	Extreme

The risk level will help you to work out what kind of action needs to be taken, and how soon you need to act.

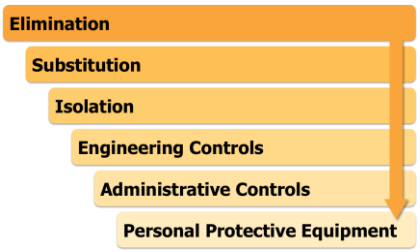
The table below is an example of a site risk policy:

Risk Level	Action
Extreme	**This is an unacceptable risk level** The task, process or activity **must not proceed**.
High	**This is an unacceptable risk level** The proposed activity can only proceed, provided that: **1.** The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. **2.** The risk controls must include those identified in legislation, Australian Standards, Codes of Practice etc. **3.** The risk assessment has been reviewed and approved by the Supervisor. **4.** A Safe Working Procedure or Work Method Statement has been prepared. The supervisor must review and document the effectiveness of the implemented risk controls.
Moderate	**This is an unacceptable risk level** The proposed activity can only proceed, provided that: **1.** The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. **2.** The risk assessment has been reviewed and approved by the Supervisor. **3.** A Safe Working Procedure or Work Method Statement has been prepared.
Low	The proposed task or process needs to be managed by documented routine procedures, which must include application of the hierarchy of controls.

The action you take will depend on:



1.4.3 Hazard Controls



Once hazards and risks have been identified and assessed you need to work out what the best way to manage them will be.

The Hierarchy of Hazard Control is the name given to a range of control strategies used to eliminate or control hazards and risks in the workplace. Hazard controls should be applied before you start work, or as soon as a hazard is identified during the work.

The Hierarchy has 6 levels.

Always start at the top of the list and work your way down.

Hierarchy Level	Explanation
1. Elimination	Completely remove the hazard. This is the best kind of hazard control.
2. Substitution	Swap a dangerous work method or situation for one that is less dangerous.
3. Isolation	Isolate or restrict access to the hazard.
4. Engineering Controls	Use equipment to lower the risk level.
5. Administrative Controls	Site rules and policies attempt to control a hazard. Includes Safe Work Practices.
6. Personal Protective Equipment	The least effective control. Use PPE while you work. This should be selected at the planning stage of your work, and checked before starting the job.

You may need to use a range of control measures to reduce the risk to an acceptable level.

1.4.3.1 Specific Control Strategies for Traffic

If the work area is going to be shared with pedestrians, site personnel, vehicles or mobile plant, you will need to make sure you have selected appropriate control measures. These may include:

- Using a flag person to control traffic.
- Setting up flashing hazard lights.
- Organising hoardings, gantries or scaffolding.
- Setting up warning signs and barriers.
- Setting up pedestrian and vehicle exclusion zones.

1.4.3.2 Specific Control Strategies for Working Around Other Equipment

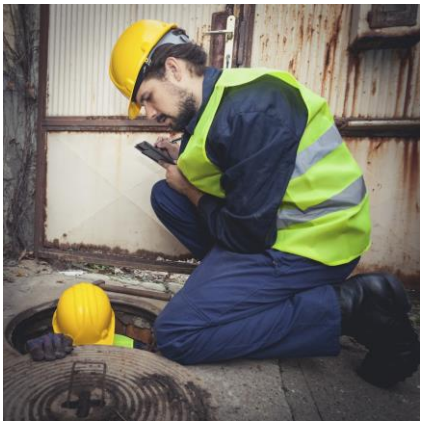
If the scaffold is to be constructed within the working radius of a crane on site, or close to other equipment with moving parts there is a hazard of the scaffolding being struck or hit by the crane or equipment.

In this situation you will need to implement a number of control strategies including:

- Safety exclusion zones to prevent access to the danger area – this may include a flag person.
- Workplace communications to assist in coordinating movements within the work area.
- Barriers or other physical means of preventing the equipment from making contact with the scaffold.

If the scaffold is being erected on, over or inside items of plant (e.g. overhead cranes, conveyors, turbines, crushers) you must make sure that all fail-safe and lock-out procedures are carried out to prevent the equipment from being started up while the scaffold is in place (or being erected or dismantled).

You also need to think about:



- The preparation of a SWMS.
- Applying for a confined space permit.
- Ensuring the team are adequately trained to work in a confined space.
- Conducting a risk assessment.
- How you will enter and exit from the confined space.
- Any other relevant workplace requirements.

A guide to determining what is a confined space is available in Appendix B.

2.1 Prepare a Scaffolding Plan

Your plan should include information on how you intend to carry out the task (sequence), how you intend to deal with any unidentified hazards and what components you will use to complete the scaffold.

The details of the scaffold plan may include:

- The number of bays, lifts and platforms.
- The location of the scaffold.
- The location of ties and bracing.
- Details of scaffold access.
- The duty of the scaffold (light, medium, heavy).

Your plan should refer to the scaffold plans or drawings and any other relevant documentation such as work method statements or site procedures.

These drawings can be used as a reference to determine the scaffold elements/parts that are required to erect it and the configuration of work platforms, ladder access and other components or associated equipment.

Make sure everybody involved in the scaffolding work is familiar with the plan and understands what they need to do.

2.2 Identify, Select and Inspect Equipment

A scaffolding task may require the use of a wide range of scaffolding, associated and safety equipment to be used and installed.

Part of completing the planning for the scaffolding job is to identify what equipment you will need, then select and inspect that equipment to make sure it is safe for use.

It is very important that you check all equipment before you use it to ensure that it is safe to use and suitable for the task.

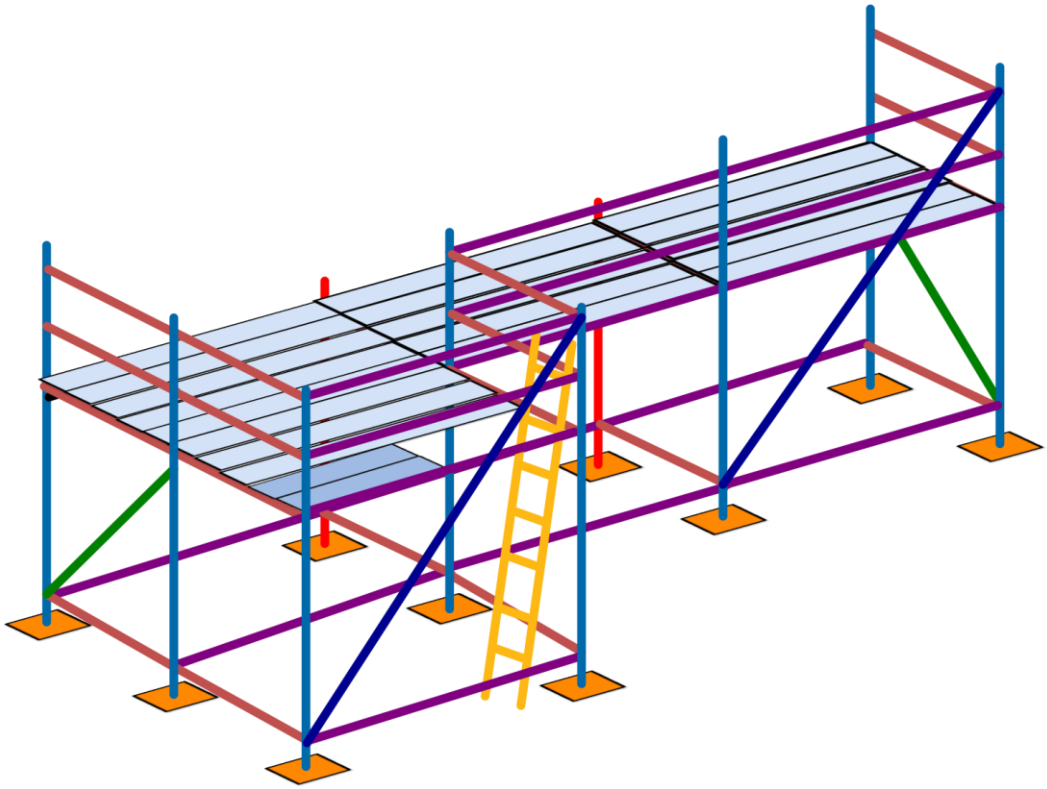
2.2.1 Identify, Select and Inspect Associated Equipment

The erection, alteration and dismantling of scaffolds requires you to use a range of associated equipment.

Associated equipment includes:

- Planks.
- Ladders and stairways.
- Scaffold tubes, tie tubes and fittings.
- Footings.
- Fibre ropes and Flexible Steel Wire Rope (FSWR).
- Screening.
- Hand tools.

Check the drawing/design or the manufacturer's manual to make sure you have all of the parts you need. For example, the scaffold shown here would require the following parts:



Part	Quantity	Colour/Legend
Standards (2m)	2	
Standards (3m)	8	
Ledger/Guardrails	20	
Transoms	20	
Braces (2m)	2	
Braces (3.6m)	2	
Ladder Access Putlogs	1	
Ladders	1	
Planks (1.2m)	2	
Planks (2.4m)	18	
Adjustable Baseplates	10	

2.2.1.1 Scaffold Planks

Planks are used to construct working platforms. They can be made of timber, aluminium or steel.

Planks should have the correct information displayed upon them.

The usual width of a scaffold plank is 225mm. The usual thickness of a hardwood solid timber scaffold plank 32mm.

This table shows the maximum span for each type of timber plank:

Type	Maximum Span
32mm Hardwood	1.8m
50mm Softwood	2.0m
63mm Softwood	2.5m

Do not use scaffold planks with any of the following faults:

Possible timber plank defects:		
Warped.	Split.	Broken.
Twisted.	Knots.	

Possible metal plank defects:		
Twisted.	End cap missing.	Crushed.
Distorted.	Broken weld reinforcing strap.	

If any of these are present then the plank **MUST NOT BE USED!**

2.2.1.2 Ladders and Stairways

Ladders and stairways are used to access a scaffold.

It is not acceptable to use a personnel hoist as the only way to access a scaffold's working platform. If there is an emergency or mechanical breakdown, all workers on the scaffold need an alternate and safe means of exiting the scaffold.

The following ladders cannot be used to access a scaffold:

- A domestic grade (or non-industrial grade) ladder.
- A step-ladder.

A single industrial grade ladder is the only type of ladder that may be used to access the scaffold.

It is vital that you only use ladders that are in good working order.

Possible ladder defects that will condemn a ladder from being used for scaffolding access:	
Metal stiles are twisted, bent or kinked.	Ladder is not industrial strength.
Crushed damaged welds or damaged feet.	Ropes, braces or brackets are missing, worn or broken.
Rungs are missing, worn, damaged or loose.	

If any of these are present then the ladder **MUST NOT BE USED!**

2.2.1.3 Scaffold Tubes, Tie Tubes and Fittings

Scaffold tubes may be made from aluminium or steel.

The minimum outside diameter of a common scaffold tube is 48mm.

The minimum wall thickness of a common steel scaffold tube is 4mm.

The minimum wall thickness of a common aluminium scaffold tube is 4.45mm (or 4.4mm or 4.5mm).

Possible scaffold tube defects:	
Pitted.	Flame cut.
Bent.	Cross cut.
Split ends.	Mushroom headed.
Tube wall thickness less than minimum requirements.	

Tie tubes are used to fix a scaffold to the structure to provide support and stability. This keeps the scaffold erect, level and stable. Generally, they are connected to the scaffold using a right-angle coupler.

Check that they are not damaged or worn and that the scaffold tubes connect properly.

Check that all components are not damaged or worn. Check that all components fit together securely.

The supplier of prefabricated scaffolding needs to provide written information about the systems.

Do not mix different components from different prefabricated scaffold systems without consent from the supplier or a qualified engineer.

Couplers may be used in conjunction with the modular components of a prefabricated scaffold in a number or ways including:

- Connecting ties to the scaffold.
- Attaching bracing to the scaffold.
- Keeping scaffold equipment in place (for example gin wheels).
- Preventing scaffold components from dislodging or coming apart.

Generally, the 2 types of coupler you would use are:

	
Swivel Couplers	**Fixed or 90° or Right Angle Couplers**

2.2.1.4 Footings

There are 2 main types of footing for a scaffold:

- Base plates.
- Adjustable base plates (screw jacks).

Footings are used to provide a stable foundation for the scaffold and to prevent unwanted movement. Depending on the ground conditions, soleplate or sole boards may be used under the base plates to provide a more stable surface. Make sure the soleplates are strong and rigid enough to distribute the load.

The minimum size of a square baseplate 225cm^2 (150mm x 150mm) and it should be at least 6mm thick.

The maximum extension on an adjustable baseplate is 600mm.

The shank (unthreaded part) of an adjustable base plate should extend at least 150mm past the maximum extension. This is to ensure that there is enough of the shank sitting within the standard to keep the scaffold stable.

The maximum load to be placed on an adjustable base plate is 3030kg.

Check all footings for damage or wear before use. Check that adjustable base plates wind and unwind smoothly and they are not bent or warped. Do not use any equipment that is faulty or damaged.

2.2.1.5 Fibre Ropes and FSWR

Fibre ropes can be used for lifting and temporarily securing components during the erection and dismantling of the scaffold.

The minimum diameter of fibre rope you would use for a hand line is 12mm.

To determine the rated capacity of fibre rope use the formula:

Rated Capacity = D2 (mm)
OR
Rated Capacity = Diameter (mm) x Diameter (mm)

You must check any fibrous ropes carefully before using them. The checklist below outlines what you are looking for. If a rope shows any of these it is unsuitable for use.

Possible fibrous rope defects:	
Missing or illegible rated capacity markings.	Chemical exposure.
Broken fibres/strands.	Brittleness.
Stretched rope (overloading).	Discolouration due to excessive heat.
Excessive wear.	Sun rot.
Abrasion.	Mildew.
High stranding.	Knots.

If any of these are present then the rope **MUST NOT BE USED!**

Flexible steel wire ropes (FSWR) are used for the termination of static lines and as guys for cantilever hoists and scaffolds.

To determine the rated capacity of FSWR use the formula:

Rated Capacity = D2 (mm) x 8
OR
Rated Capacity = Diameter (mm) x Diameter (mm) x 8

You must check any FSWR carefully before using it. The checklist below outlines what you are looking for. If a FSWR shows any of these then it is unsuitable for use.

Possible FSWR defects:	
Missing or illegible rated capacity markings.	Stretched or overloaded FSWR.
Bird-caging (Strands loosened from proper tight lay).	Knotted FSWR.
Severe kinking or fractures from bending or reeving.	Core collapse.
More than 10% wear in the rope diameter.	Severe/serious corrosion (indicated by loose and springy wires).
Crushed/damaged strands.	High stranding.
Splice, ferrule, eye or thimble damage.	Chemical exposure.
Abrasion wear.	High temperature exposure.
Squashed FSWR.	
Excessive number of broken wires. (Not to exceed 10% of the total number of wires in the FSWR over a distance of not more than one rope lay – where one rope lay is approximately 8 x the diameter of the FSWR). E.g. 10mm diameter. 6/19 FSWR – 6 x 9 = 114 Wires. 114/10 = 11.4 = 11. 11 Broken wires over a distance of 8 x 10mm = 80mm.	

If any of these are present then the FSWR **MUST NOT BE USED!**

2.2.1.6 Screening

Sheeting or screening is used to protect workers from environmental hazards such as dust and sunlight.

Do not use flammable material such as hessian for sheeting.

An engineer should always check the design of a sheeted scaffold.

2.2.1.7 Hand Tools

There are many different tools and maintenance equipment you can use for the various different tasks needed to construct a scaffold or cantilevered hoist.

Tools for Tightening and Loosening Fastenings (e.g. nuts and bolts):

	
Spanners	**Podgers**
	
Box Spanners	**Wrenches**

Tools Used For Cutting Wire and Other Equipment:

	
Wire Nips	**Cutters**

Impact Tools:

		
Hammers	**Sledge Hammers**	**Hammer Drills**

Tools for Moving Materials:

	
Shovels	**Wheelbarrows**

Tools for Checking That a Scaffold is Level and for Measuring Distance:

		
Spirit Levels	**Torpedo Levels**	**Tape Measures**

A scaffold belt can be used to carry hand tools while working.

All tools and equipment used for the erection, alteration and dismantling of scaffolds must be used in accordance with the manufacturer's specifications, organisational policies and procedures and safe work practices.

Read the operator's manual before using any equipment for the first time.

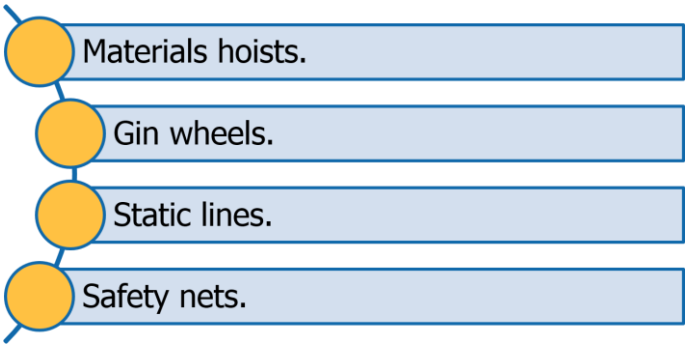
Do not exceed the limitations of the equipment – it could be extremely dangerous and could damage the equipment.

Always check that all tools and equipment are functioning correctly and that they do not show any signs of damage or wear.

2.2.2 Identify, Select and Inspect Scaffolding Equipment

Scaffolding equipment is made up of the equipment that is used with the scaffold while the scaffold is in use. This equipment is often installed once the scaffold is in place, or during the erection process.

Scaffolding equipment includes:



2.2.2.1 Materials Hoists

Materials hoists are used to lift and lower materials between the ground and a working platform. Materials hoists run up and down the outside of a tower using a wire rope hoisting system for raising and lowering the platform.

They are designed to transport materials only and personnel should never ride on the hoist.

Check that all parts are present. Check for any signs of damage or wear. Always refer to the manufacturer's instructions when inspecting the materials hoist components.

2.2.2.2 Gin Wheels

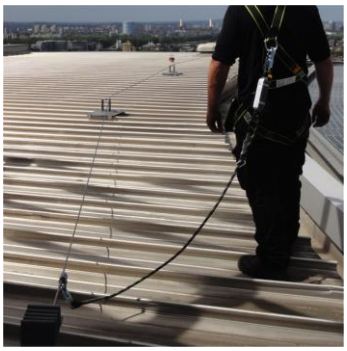
Gin wheels are used to raise and lower loads. They may be a 'hook type' or a 'ring type' depending on the way it is attached to a scaffold pole.

- The minimum diameter of non-conductive rope you would use for a gin wheel is 16mm.
- The maximum load you would lift with a gin wheel is 50kg.
- Do not use gin wheels that are not fitted with rope guides.

2.2.2.3 Static Safety Lines

Static lines are horizontal or substantially horizontal lines to which a lanyard may be attached and which is designed to arrest a free fall.

These provide a suitable anchor point for a fall-arrest system, while still allowing a limited range of movement along the path of the line.



The parts of a static line need to be checked periodically while the system is in use. You should be checking for faults such as:

Component	Condition/Fault to be Checked	
FSWR	◆ Kinks or fractures from bending or reeving. ◆ Crushed or damaged strands. ◆ Damaged splice. ◆ Exposure to high temperatures. ◆ Wear and abrasion. ◆ Broken wires. ◆ Damage to the ferrule. ◆ Damage to the eye. ◆ Damage to the thimble.	◆ Core collapse. ◆ Bird-caging where strands loosen from their proper tight lay. ◆ High stranding. ◆ Corrosion indicated by loose springy wires. ◆ Knotting. ◆ More than 10% wear in the diameter of the rope. ◆ Broken wires exceeding the allowable limit.
Anchors and Connectors	◆ Damage. ◆ Wear. ◆ Irregular or excessive movement. ◆ Security of parts.	◆ Capacity markings or information are present. ◆ Any indication that the component may fail during use.

2.2.2.4 Safety Nets

Industrial safety nets are sometimes used as an effective means of fall protection for those working at heights where it is not practicable to provide scaffolds or temporary guard railings.

When combined with overlay nets of finer mesh size, they can also be used to contain falling debris.

Safety nets may be installed where there is a risk of tools, equipment and materials falling from a height on other workers, plant, machinery, structures or pedestrians.

Before installing a safety net you need to make sure it is in safe working condition.

Common faults to check for are:

- Damage.
- Stretching.
- Frayed fibres.

You also need to check the safety net to make sure that it has been used, handled and stored correctly.

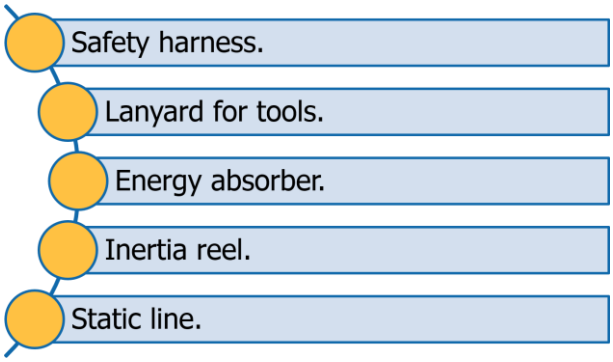
Possible safety net defects:	
Dragging the net over rough surfaces or edges.	Contact with hot gasses from blowtorches.
Contact of chords with sharp edges.	Contact with ashes from chimneys or furnaces.
Stacking of materials on net.	Chemical attack.
Accumulation of debris in the net.	Indications of contact with flames or sparks from welding or oxy cutting equipment.
Indications of people jumping or throwing things into the net.	Damage to the supporting framework from collisions or being struck by moving loads.

If the safety net shows signs of any of the above practices it should not be used.

2.2.3 Identify Safety Equipment Requirements

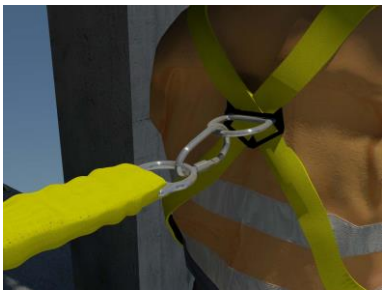
Depending on the requirements of the job, you may need to use safety equipment to reduce the risk to an acceptable level.

Safety equipment includes:



All safety equipment should be selected at the planning stage. Safety equipment needs to be inspected before and after use.

2.2.3.1 Safety Harnesses



In most cases of working at heights a full body harness should be worn. Harnesses must be correctly fitted in accordance with the manufacturer's instructions to ensure effectiveness.

Workers should connect the fall-arrest line to the attachment point on their harness (dorsal attachment point in the middle of the back, or the chest connection) that will provide the best protection in the situation it is being used.

Safety harnesses must meet the requirements of AS/NZS 1891 Industrial fall-arrest systems and devices.

A fall-arrest harness must be inspected before use.

Common defects that will condemn a safety harness from use are:

- Fraying.
- Splitting.
- Any obvious signs of damage to any part of the harness.

Shown here are some examples of some things you need to check the harness for:

Component	Condition/Fault to be Checked
Webbing	◆ Cuts or tears. ◆ Abrasion damage. ◆ Excessive stretching. ◆ Damage due to contact with heat, corrosives or solvents. ◆ Deterioration due to rotting, mildew, or ultraviolet exposure.
Snap Hooks	◆ Distortion of hook or latch. ◆ Cracks or forging folds. ◆ Wear at swivels and latch pivot pin. ◆ Open rollers. ◆ Free movement of the latch over its full travel. ◆ Broken, weak or misplaced latch springs (compare if possible with a new snap hook). ◆ Free from dirt or other obstructions, e.g. rust.
D-rings	◆ Excessive 'vertical' movement of the straight portion of the D-ring at its attachment point of the belt, so that the corners between the straight and curved sections of the D become completely exposed. **NOTE:** Excessive vertical movements of the D-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 accidently 'roll out' of the D under load. ◆ Cracks, especially at the intersection of the straight and curved portions. ◆ Distortion or other physical damage of the D-ring. ◆ Excessive loss of cross-section due to wear.
Buckles and adjusters	◆ Distortion or other physical damage. ◆ Cracks and forging laps where applicable. ◆ Bent tongues. ◆ Open rollers.
Stitching	◆ Broken, cut or worn threads. ◆ Damage or weakening of threads due to contact with heat, corrosives, solvents or mildew.

2.2.3.2 Lanyards for Tools

Lanyards are used to stop tools falling from heights. These lanyards are connected to the tool and wrap around the wrist or belt of the scaffolder.

2.2.3.3 Energy Absorbers

There should be a minimum of slack in the fall-arrest lanyard between you and the anchor point, which should be as high as the equipment permits.

The energy absorber should restrict the fall distance to a maximum of 2 metres before the fall-arrest system takes effect.

Avoid work above the anchor point, as this will increase the free fall distance in the event of a fall, resulting in higher forces on the body and greater likelihood of the energy absorber snagging on obstructions.

To reduce injuries caused by a fall, energy absorbers should be used as part of the fall arrest system.

2.2.3.4 Inertia Reels

Inertia reels provide a worker with a relatively free range of movement or extra reach compared to a lanyard, with the added safety feature of being able to lock in the event of a fall, arresting the descent of the worker.

Inertia reels should not be used in the following situations:

- While working on a sloped surface (e.g. a steeply pitched roof) or any other surface where a fall may not be a quick vertical one.
- Locked as a constant support for a worker during normal work.
- In conjunction with a lanyard.

Inertia reels must comply with AS 1891.3 Fall-arrest devices.

Shown here are some examples of some things you need to check an inertia reel for:

Component	Condition/Fault to be Checked
Rope (Fully Extend Rewind Drum Anchorages)	◆ Cuts. ◆ Abrasions or fraying. ◆ Stretching. ◆ Damage due to contact with heat, corrosives, or solvents. ◆ Excessive dirt or grease impregnation. ◆ Check that the rope end is securely anchored to the drum.
Anchorage Body	***a) Mountain ring:*** ◆ Physical damage or wear. ◆ Cracks. ◆ Mounting security. ***b) Anchorages body proper:*** ◆ Physical damage. ◆ Check for the entry of foreign bodies. ◆ Loose or missing screws, nuts or similar objects. ◆ Position of the clutch compression indicator button.
Locking Mechanisms and Rope Guides	◆ Check rope guides for excessive wear or ridging. ◆ Check that the rope-locking mechanism locks and holds securely. ◆ Ensure that the rope runs freely through the anchorage, and that on rewind drum anchorages the rope rewinds completely without loss of tension.
Hardware	◆ Examine the condition and locking action of any associated snap hooks or links.

2.3 Identify Communication Methods and Equipment

Workplace communications may take the form of:

- Verbal and non-verbal language.
- Written instructions.
- Signage.
- Hand signals.
- Toolbox meetings.

Talk to supervisors, colleagues or managers to discuss the best methods for communication while you are still at the planning stage of the job.

2.3.1 Select and Inspect Communications Equipment

Most worksites use two-way radios for communication. The 2 types are conventional and fixed.

Depending on site requirements and policies you may also be allowed to use a mobile phone to communicate with other personnel during the scaffolding task.

It is important that the two-way system provides clear signals without any interference on the channel.

Make sure all equipment is working properly and that you can communicate with other personnel clearly (without interference) **BEFORE** you start the job. Do not use any communication equipment that is not consistently working properly.

2.3.1.1 Conventional Radio

Great care must be taken when allocating frequencies/channels to make sure that there are no other operators using the same frequency in the area.

Interference on your frequency can be a safety hazard. Stop work until the radio is checked or a new frequency selected and allocated.

2.3.1.2 Fixed Channel Radio

Fixed channel radio is a computer-controlled two-way system that locks other radio users out of your selected frequency.

With fixed channel radio it is possible to have several separate groups on one site communicating by radio without interfering with each other.

Fixed channel radio is recommended for large sites.

2.4 Isolate Defective Equipment

If you identify any equipment that is defective, damaged or faulty you must not use it. The equipment needs to be isolated from use to stop anybody from accidentally using it and the defect needs to be reported to an authorised person.

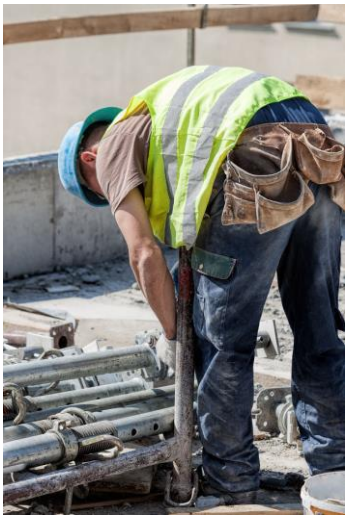
Make sure you complete any isolation procedures as required.

This may include tagging or locking out equipment and completing fault reports or other documentation.

Faulty equipment may need to be labelled and rejected, destroyed or returned to the manufacturer for repair (depending on the type and severity of the fault).

2.5 Set Up for the Task

Once you have selected all of the equipment you will need and made sure it is safe to use you will need to start setting up for the task.



Planning and preparation are essential to conducting the work safely and on schedule.

This includes:

- Implementing hazard controls as required.
- Checking the ground suitability where the scaffold is going to be erected.
- Preparing the footings for the scaffold to ensure stability throughout the erection process.
- Preparing any scaffold and associated equipment for erection.
- Fitting and securing safety equipment in accordance with procedures.
- Positioning equipment for the work application and stability.

2.5.1 Implement Hazard Controls

Once you are ready to start setting up the scaffold make sure you have implemented the necessary hazard control measures.

Talk to other workers in the area to make sure they are aware of the control measures you intend to use.

Hazard prevention or control measures may include:

- Power disconnected by competent authority (where applicable).
- Safe and adequate access and egress (entry and exit).
- Safety tags on electrical switches and isolators.
- Safety observer (spotter) inside an exclusion zone (e.g. power lines).
- Power line warning systems (e.g. tiger tails).
- Setting up barricades and traffic control to keep the area clear.
- Pedestrian control (barricades, signs, etc.) to limit the number of people in the area.
- Moving any obstructions out of the way.
- Setting up adequate lighting in the work area.
- Ventilating work areas, especially if you are working in a confined space. A build-up of fumes can kill.

Some hazards are caused by the work being done so you may need to move obstructions such as equipment, materials or debris, or install trench covers if working near excavations.

Always wear the required personal protective equipment (PPE) for the job. Make sure that any control measures are consistent with workplace and safety standards. If you are unsure, check with your WHS officer or supervisor.

2.5.2 Check Ground Suitability

Before setting up the scaffold or any other equipment you need to check the ground conditions to make sure the scaffolding tasks are conducted on a firm surface capable of supporting the structure or task in a safe manner.

You also need to determine if a larger or more suitable base is required for the scaffold and equipment erection.

The scaffold or equipment could become unstable during operation if the ground is rough, uneven or soft. Back-filled trenches may not have compacted completely and are dangerous to set up the equipment on.

Check to make sure there are no underground services running through the area where you plan to set up the plant.

The pressure of the equipment could cause damage to the underground services, pipes or cables.

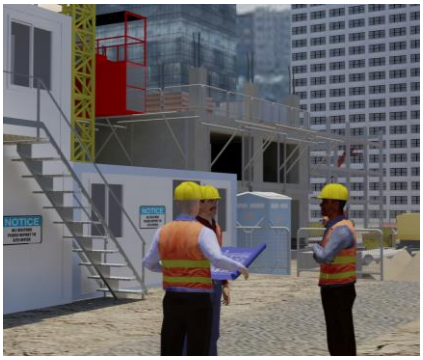
Different ground conditions and soil types can have an effect on the stability of a scaffold construction. You will need to establish the suitability and capacity of the ground before setting up the scaffold.

Speak to a competent person such as an engineer with experience in scaffolding structural design or analysis and knowledge of the relevant Australian Standards to make sure the ground conditions are suitable.

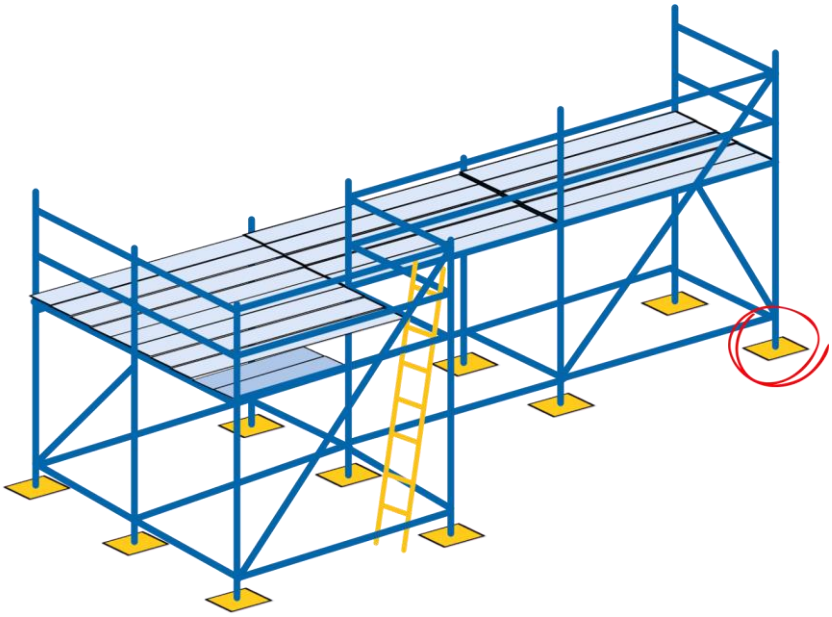
You must also check the load bearing limits of suspended concrete floors, building roofs and landings if loads, scaffolds or equipment is going to be resting on them.

To make sure the ground is strong, firm and level enough to keep the scaffold erect, level (horizontally straight), plumb (vertically straight) and stable you need to know 2 things:

- The weight of the scaffold.
- The load bearing ability of the ground.



To work out the dead load weight of the scaffold, add the weight of all components resting on each baseplate.



Part	Weight	Part	Weight
Standards (2m)	**12kg**	Ladder Access Putlogs	**8kg**
Standards (3m)	**18kg**	Braces (3.6m)	**17kg**
Transoms	**8kg**	Ledger/ Guardrails	**10kg**
Braces (2m)	**10kg**	Ladders	**20kg**
Planks (1.2m)	**10kg**	Adjustable Baseplates	**7kg**
Planks (2.4m)	**20kg**		

Using the information in the table we can calculate that the total weight resting on the circled baseplate is 99.5kg. This is worked out by adding the following items:

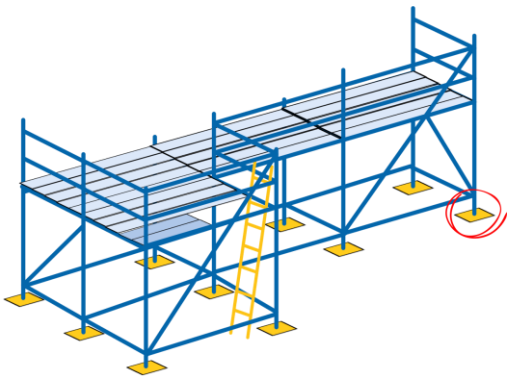
Item to be added	Weight of Item
Baseplate	7kg
Standard (3m)	18kg
½ the weight of each Transom	16kg (4 Transoms at 8kg ÷ 2 = 16kg)
½ the weight of each Ledger	20kg (4 Ledgers at 10kg ÷ 2 = 20kg)
½ the weight of each Brace (2m)	5kg (1 Brace at 10kg ÷ 2 = 5kg)
½ the weight of each Brace (3.6m)	8.5kg (1 Brace at 17kg ÷2 = 8.5kg)
¼ the weight of the Planks (2.4m) held by the Standard	25kg (5 Planks at 20kg ÷ 4 = 25kg)
Total Dead Load Weight	**99.5kg**

2.5.3 Prepare Footings and Foundations

A scaffold must have a firm footing to keep it stable and secure.

Soleplates/boards and base plate or screw jacks are used to provide a secure foundation.

The size of a soleplate depends on the combined dead load, and the live load weights. To work out how long these need to be you need to know the total weight that will be placed on the specific soleplate and the weight bearing ability of the ground you are setting up on.



For example the circled point on a medium duty scaffold (450kg per bay) in the configuration shown (using the dead load weight of 99.5kg calculated in 2.5.2) with 300mm wide soleplates available and ground with a weight bearing of 2.8t would require soleplates 0.3m long.

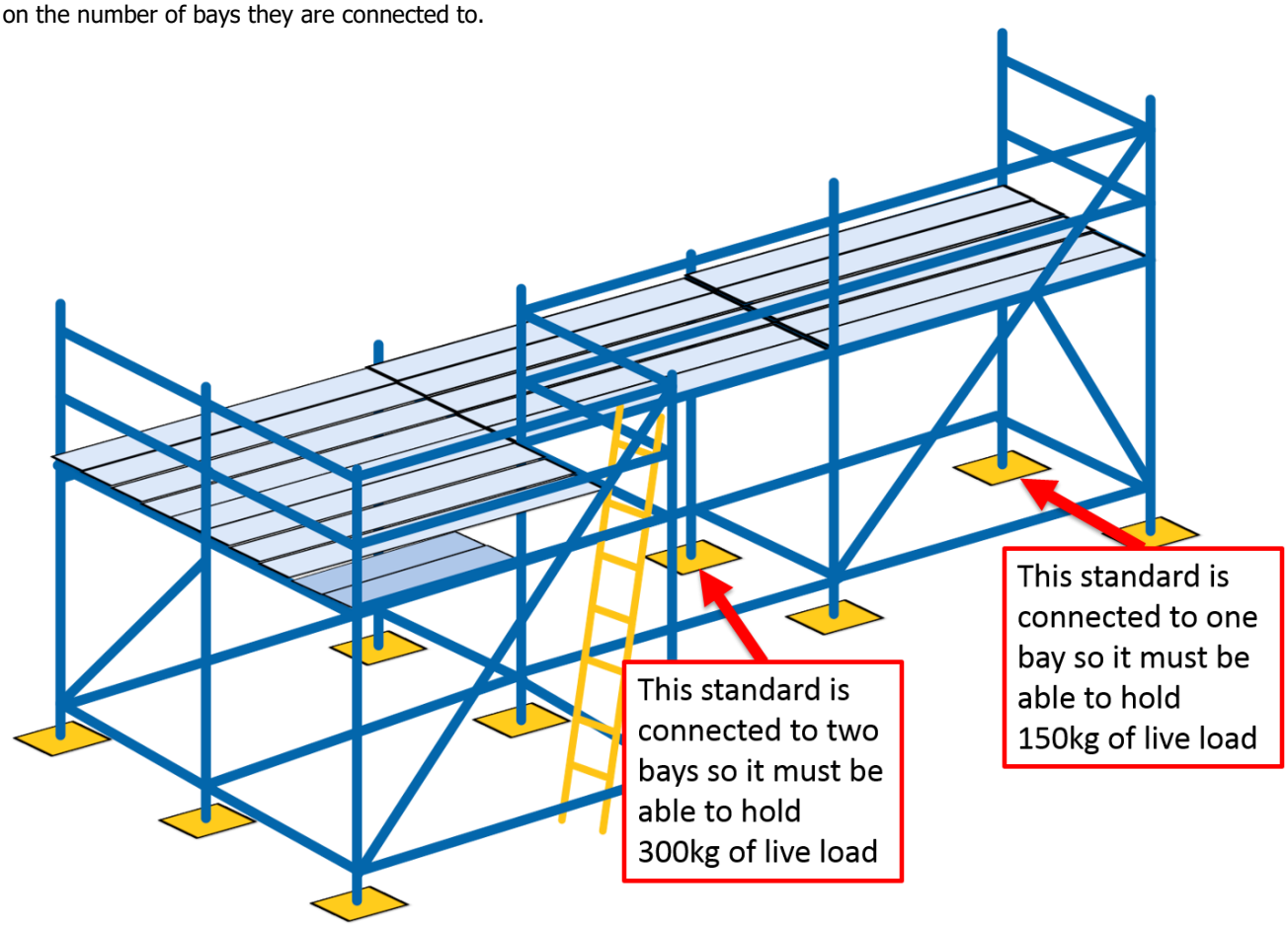
To work this out calculate the live load of the standard as 1/3 of the duty live load per bay, giving you 150kg.

Add the dead load (99.5kg) to the live load (150kg) = 249.5kg.

Divide this answer by the load bearing pressure (2800kg /m2) = 0.89kg.

Divide this answer by the width of the soleplate (0.3m) = 0.29m (round this up to 0.3m).

The example below shows a medium duty scaffold with the live loads that different standards must be able to hold based on the number of bays they are connected to.



2.5.4 Fit Safety Equipment

All safety equipment needs to be fitted before starting the scaffolding work. You need to make sure it is appropriate for the task and that it fits you correctly.

Never begin a scaffolding task without the appropriate safety equipment.

Safety systems (such as static lines) and working at heights where there is a chance of falls, require the use of a full body fall-arrest harness and installed anchor points.

Safety equipment also includes PPE. Always make sure you are wearing the correct PPE for the task and worksite.

Generally at a minimum this would include:

- Hard hat/safety helmet.
- Safety gloves.
- Steel-capped work boots.
- High-visibility clothing.

Check for signage on site or talk to a manager or supervisor if you are unsure of the PPE requirements for the site.

2.5.5 Prepare and Position Scaffolding Equipment

All equipment and scaffolding needs to be prepared in line with site procedures, the scaffolding plan and the manufacturer's specifications before you start the work.

Any equipment and plant that you will be using throughout the scaffolding work needs to be correctly and safely positioned. This could include positioning hoists or moving scaffolding components into position where it can be safely accessed.

It also includes coordinating resources so that you have everything that you need in or close to the work area. This will allow you to erect the scaffold and equipment without having to continuously leave the work area, or disrupt operations that may be taking place elsewhere on the worksite.

3.1 Erect Scaffold and Scaffold Equipment

Erecting a scaffold or cantilevered hoist requires careful planning, knowledge of equipment and procedures, accurate site information and good communication skills.

Equipment should be unloaded as close as possible to the work area and arranged in a logical order.

3.1.1 Erecting a Scaffold

An example of a typical scaffold erection could be:

1. Place 2 screw jacks on the ground.
2. Place 2 standards on the screw jacks.
3. Fix a transom to the lower parts of the standards at the required height.
4. Fix 2 ledgers at the base of the standards at 90 degrees to the transoms.
5. Place 2 more standards on 2 more screw jacks and fix to the other end of the ledgers.
6. Fix transoms to the upper parts of the standards at the required height.
7. Fix 2 ledgers at the top of the standards at 90 degrees to the transoms.
8. Check that the structure is stable – adjust the level by using adjustable screws and wedges.
9. Continue this process to create the required number of bays.
10. Place planks on the transoms to create a safe working surface to erect the next lift. Use a ladder for access.
11. Repeat steps 2-9 to create the second lift.
12. Install handrails, guardrails and toeboards.
13. Fix diagonal bracing.
14. Fix ties to the scaffold in the appropriate positions.

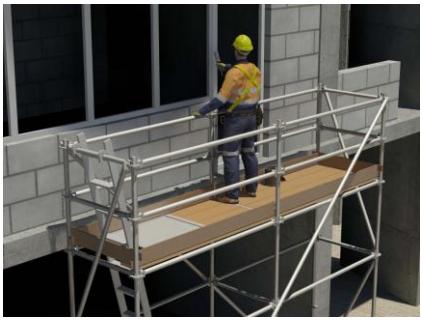
While erecting scaffold it is important to make sure that:

- Standards, transoms, ledgers, braces, platform brackets and tie bars are positioned and fixed correctly.
- Scaffold is squared, level and plumb.
- Toeboards, guardrails and midrails are fixed.
- Ladder is positioned correctly and fixed.
- Scaffold matches the drawing or plans.

If an uncompleted scaffold must be left overnight, you must remove all access to the scaffold and isolate or barricade off the area. Use signage and physical barriers to prevent unauthorised access to the scaffold.

3.1.1.1 Working Safely at Heights

Working at heights includes any situation where a worker, or other nearby person, is exposed to a risk of falling (from one level to another) that is likely to cause injury to the worker or person.



Generally this includes:

- Work conducted in or on plant or a structure that is at an elevated level.
- Work conducted in or on plant that is being used to gain access to an elevated level.
- Work conducted near an opening through which a person could fall.
- Work conducted near an edge over which a person could fall.
- Work conducted on or near a surface through which a person could fall.
- Work conducted on or near a slippery, sloping or unstable surface.

In short, working at heights can be dangerous. Even with the use of safety equipment there is still a danger when working up high.

Do not ever work on the open framework of a scaffold without fall protection systems in place. Guardrails and midrails should be installed on working platforms as soon as possible during the erection and dismantling of scaffolds.

When working at heights:

- Make sure that the work area is kept clean and tidy. Rubbish should be removed regularly in a safe manner. Do not throw rubbish down from the work area to the ground.
- Keep access ways clear of materials, tools and equipment.
- Pass, receive and position components safely and confidently.
- When using handlines you should keep your back straight, your knees slightly bent and your feet placed firmly on a ledger. Use the standard as an anchor for your body.

3.1.1.2 Be Aware of Changing Weather Conditions

It is important that you remain aware of changing weather conditions so that you can adjust your operating methods and techniques where appropriate, or stop work altogether if necessary.

Sudden strong gusts of wind may cause workers to lose their balance or cause materials or equipment to be swept over the edge of the work area.

Rain may cause the surface of the work area to become slippery.

3.1.1.3 Communications

Make sure you select the most appropriate communication equipment and methods to coordinate the scaffolding task.

This communication could be between you and plant operators, or other members of the scaffold team.

Communications need to be clear especially between workers who are on different levels of the scaffold during the erection process.

It is important that you are able to coordinate the movement of scaffold components and that you work to the schedule or plan during the erection process. It will help to ensure the stability of the scaffold and the safety of the workers in the area.

3.1.2 Scaffold Work Platform Requirements

When positioning the planks for the working platform you need to make sure that any gaps between the planks do not exceed 10mm and that all planks are the same thickness.

Using planks that are different thicknesses can cause a tripping hazard.

The planks can be overlapped on the returns (corners) of a scaffold.

It is important that there is enough space on the work platform for the tasks that need to be carried out. Make sure there is enough clear access on all working platforms:

Situation	Minimum Clear Access on Work Platform
Non-working access platform	450mm
Workers using hand tools	450mm
Workers and materials	675mm

3.1.2.1 Platform Brackets

Platform brackets are generally fixed on the inside of the scaffold but may be fixed on the outside in some situations such as alongside the working face.

3.1.3 Guardrail and Edge Protection Requirements

Adequate edge protection needs to be installed on all scaffolds where a person or object could fall more than 2m.

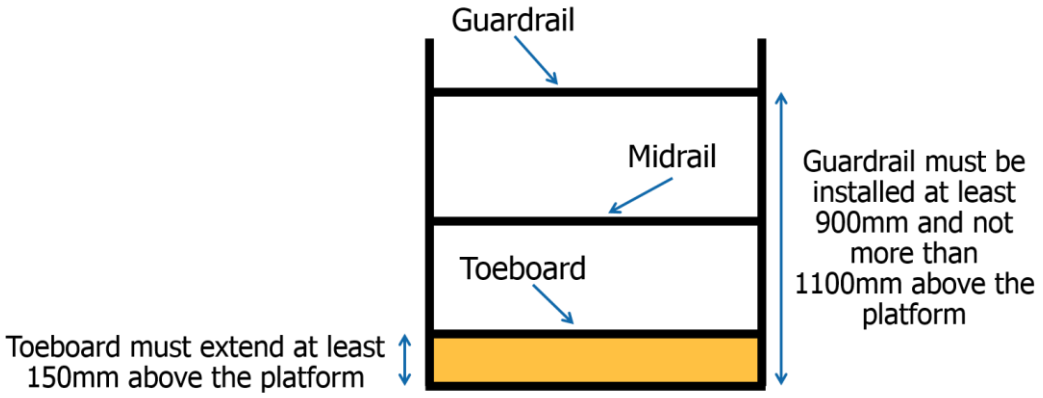
Basic edge protection on a scaffold is made up of 3 main parts:

- Guardrails.
- Midrails.
- Toeboards (or kickboards).

Guardrails may be scaffold tubes, purpose-designed components (particularly when using prefabricated scaffolding systems).

Under no circumstance can ropes (fibre or FSWR) or chains be used as guardrails.

The gap between an unprotected edge and the working face (structure or building) must not exceed 225mm.



3.1.4 Installing Ladder Access

Ladders may be used to provide access to scaffolds.

It is important that ladders are secured correctly and that the appropriate safety measures are adhered to when installing and using them.

A ladder must extend at least 900mm above the work platform.

Where ladders are used between working platforms, the maximum height allowed between platforms is 4m or 2 lifts.

Where ladder access is installed within the scaffold (such as with mobile frame scaffolds) through the floor of the working platform it is important that the opening is adequately protected.

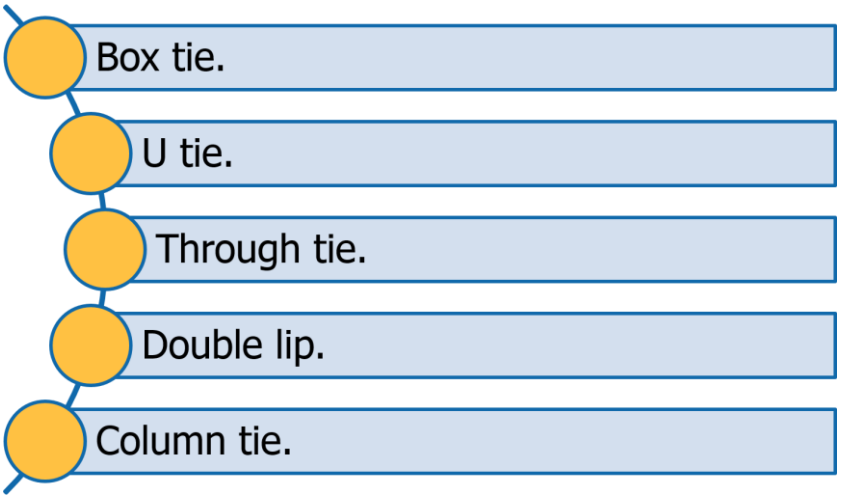
To do this you may use:

- Trapdoors.
- Gates.
- Edge protection.

3.1.5 Bracing, Ties and Guys

Ties are used to fix a scaffold to a building or steelwork. This keeps the scaffold erect, level and stable. They are connected to the scaffold using a right-angle coupler.

There are different types of tie assemblies that can be used to stabilise a scaffold. They are:



Ties need to be arranged correctly to provide stability to the scaffold. Ties need to be spaced vertically and horizontally, taking into account the strength of both the tie assembly and the supporting structure.

Ties need to be spaced every 3rd bay, every 2nd lift and at the ends of the scaffold.

When using plan bracing to increase the tie spacing on a prefabricated scaffold, you would strengthen each tie by fixing check couplers (or additional couplers) to the tie tubes.

When fixing a tie tube to a wedge-type modular ledger, fix a check coupler (or additional coupler) over the wedge to the fix ledger against the uplift.

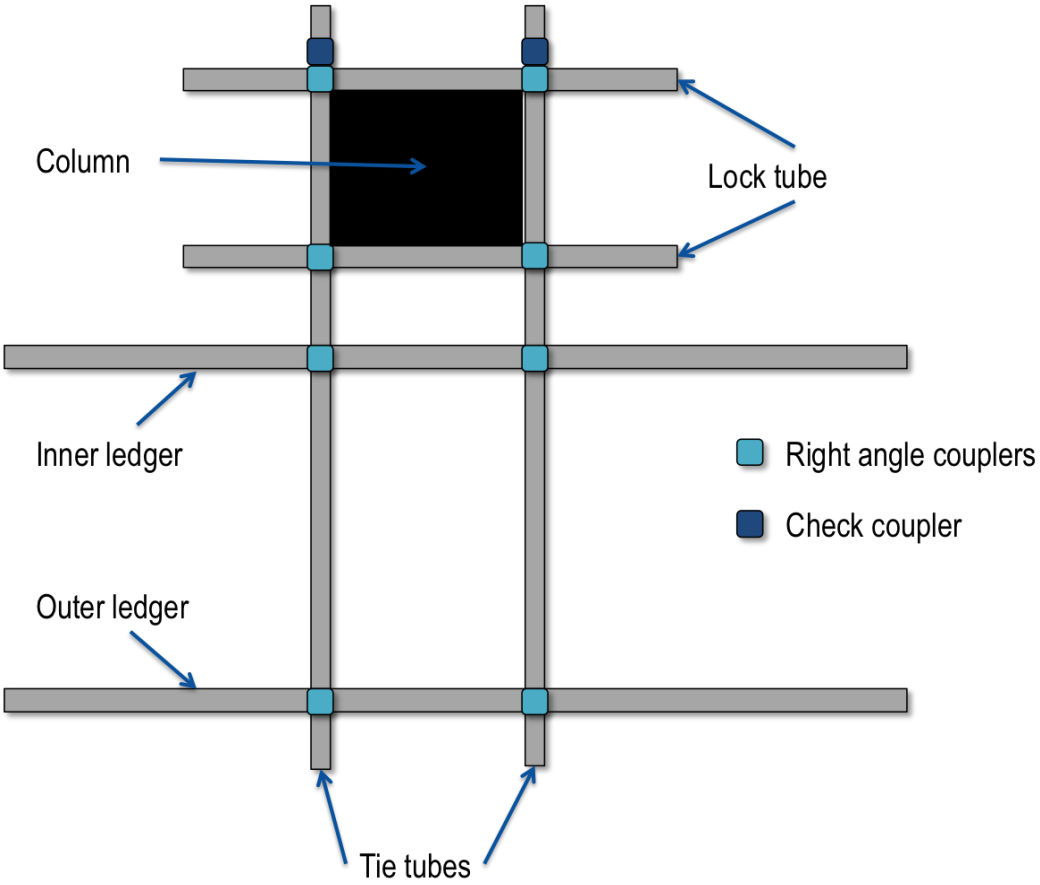
On a modular scaffold, fix the first lift (base lift) at the standards lowest connection points (or at the base of the standards).

On an unsheeted modular scaffold you can allow 3 unbraced panels between the longitudinally braced panels.

On an unsheeted modular scaffold, fix transverse braces at each end (or in each lift at each end) of the modular scaffold.

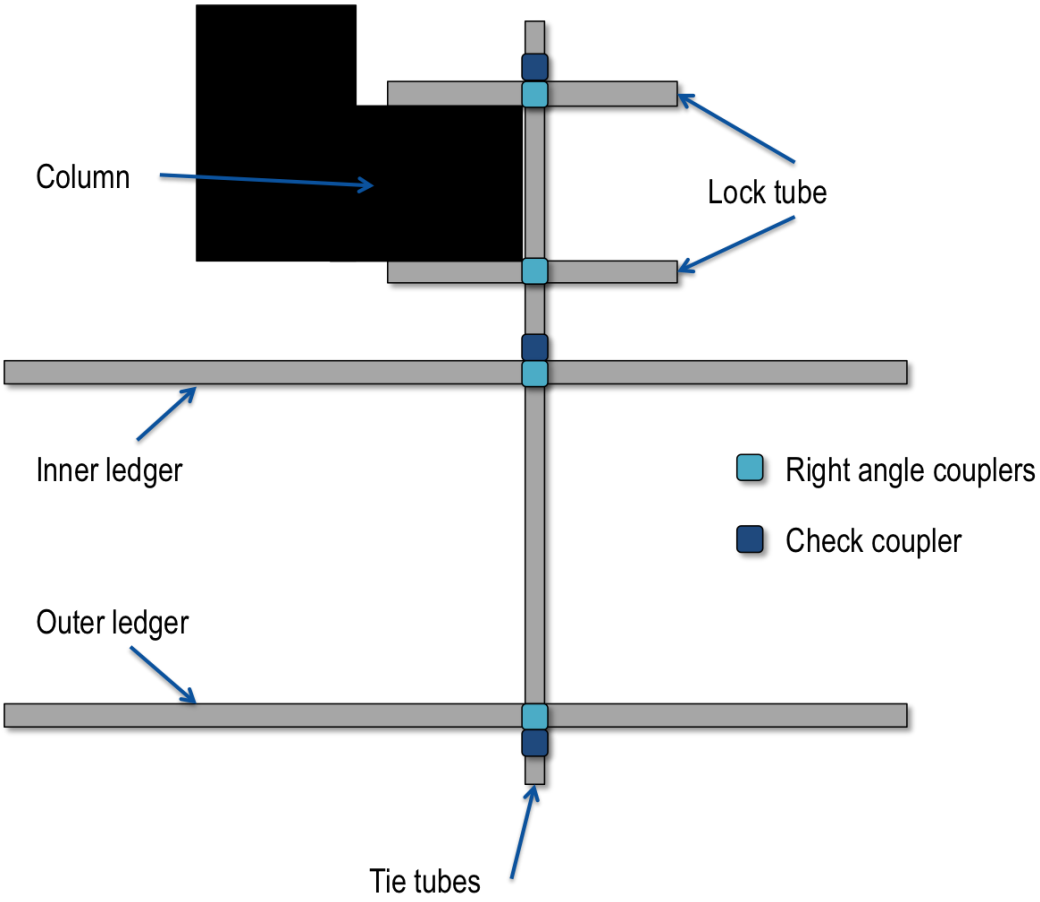
3.1.5.1 Box Tie

The following diagram shows an example of a box tie assembly.



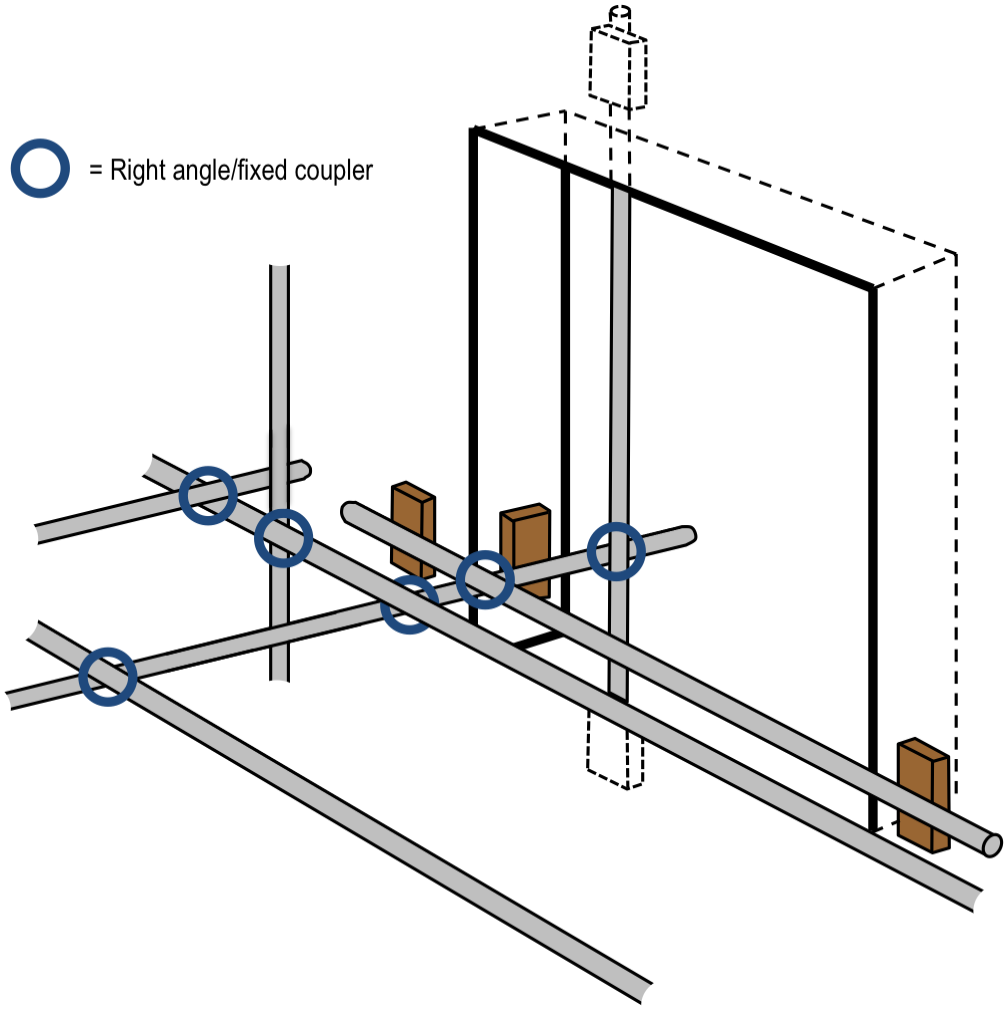
3.1.5.2 U-tie

The following diagram shows an example of a U- tie assembly.



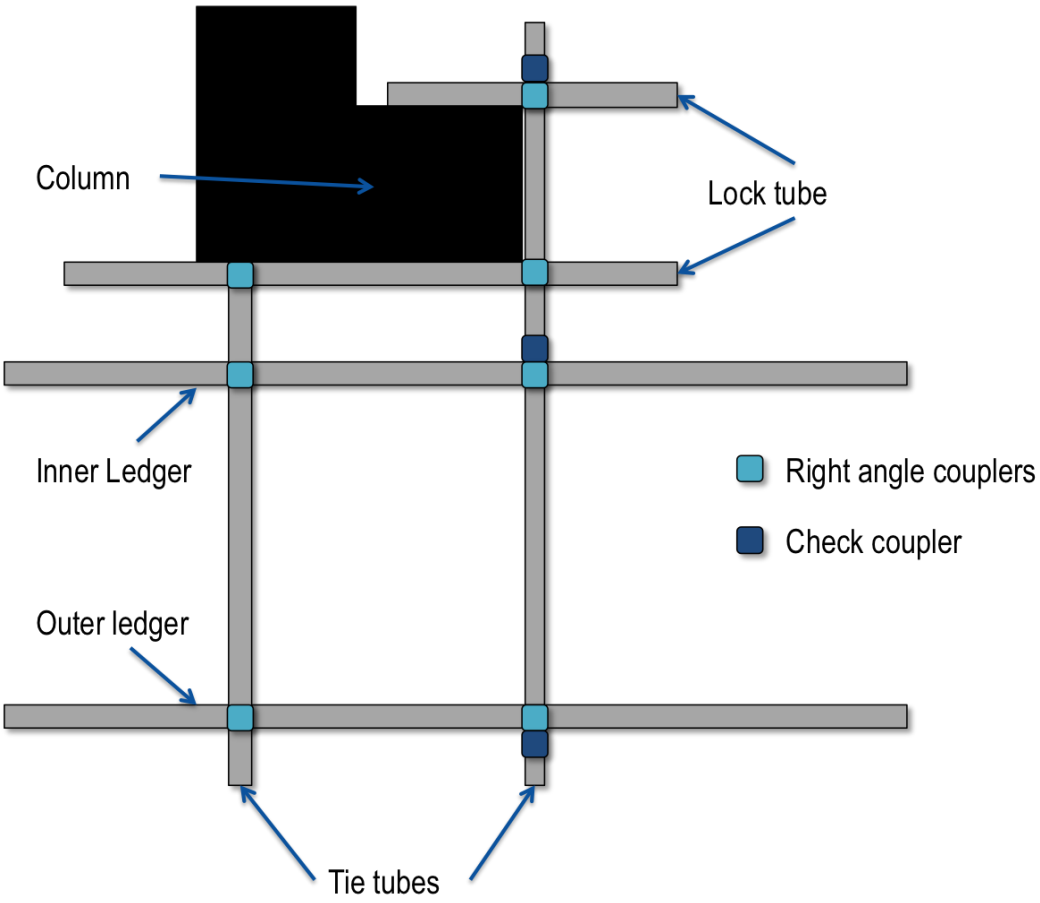
3.1.5.3 Through Tie

The following diagram shows an example of a through tie assembly.



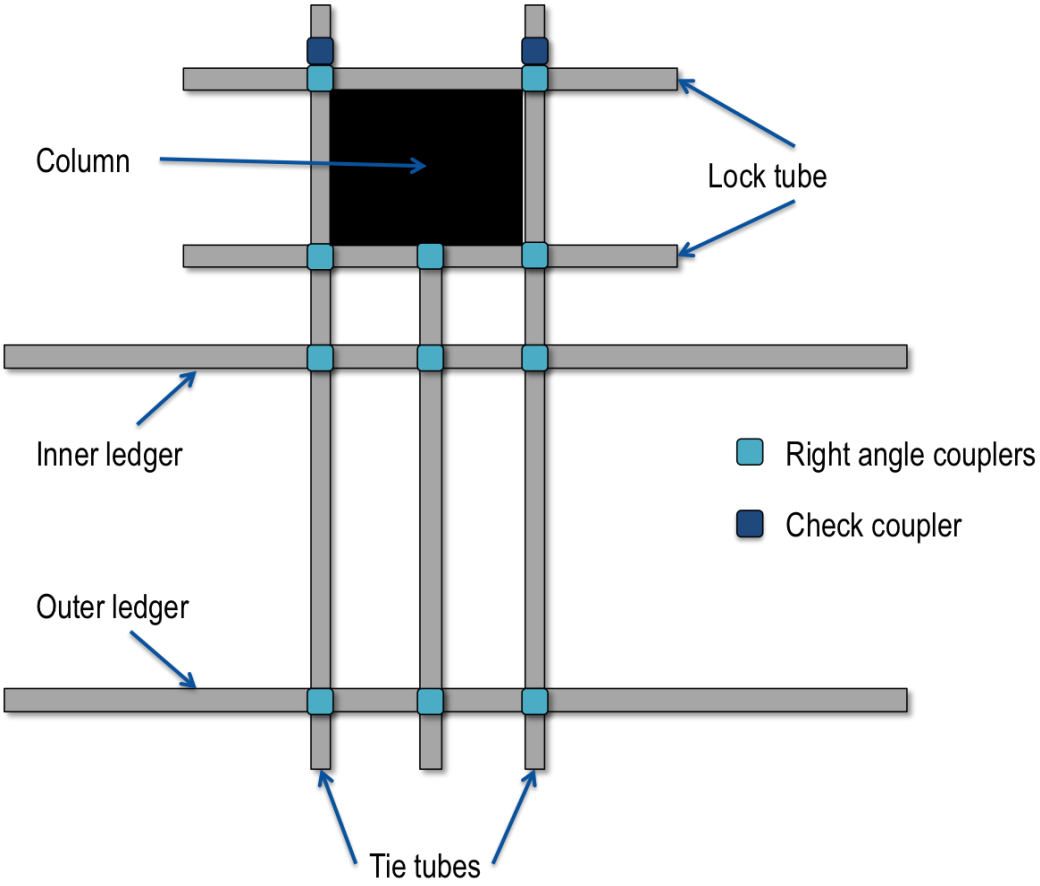
3.1.5.4 Double Lip

The following diagram shows an example of a double tie assembly.



3.1.5.5 Column Tie

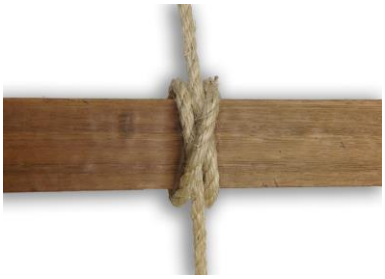
The following diagram shows an example of a column tie assembly.



3.1.6 Temporary Connections

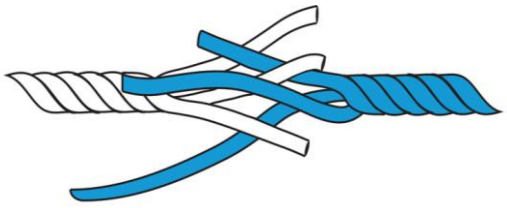
Temporary connections include knots, bends, hitches, splicing and whipping. In short this is work with ropes for the purpose of securing and shifting equipment and loads.

During scaffolding tasks it is important that you know how to tie a number of knots, bends and hitches to safely lift materials, as well as knots and splices that are used in conjunction with gin wheels.

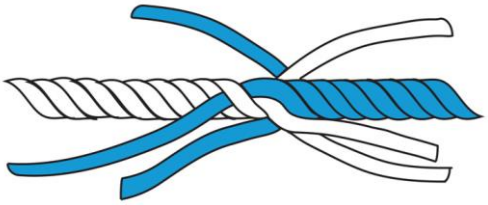


3.1.6.1 Fibre Rope Splice

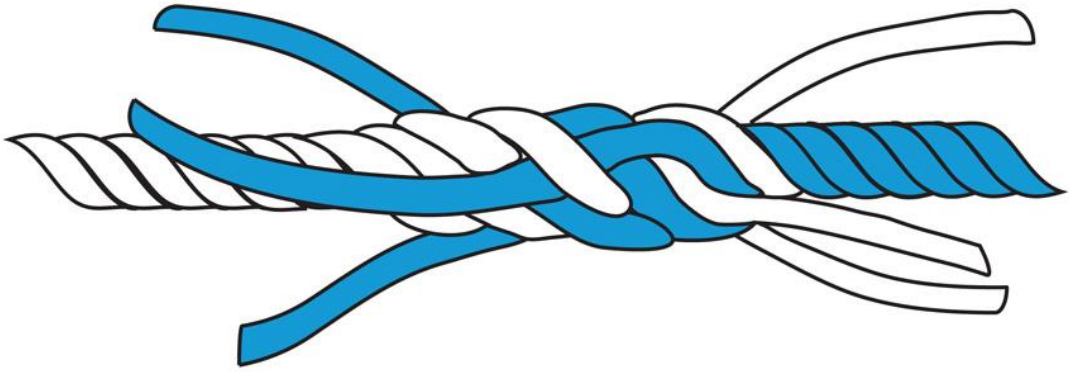
1. Un-lay seven turns at the end of each rope and place the ends together.



2. Position each strand between two strands of the opposite end.

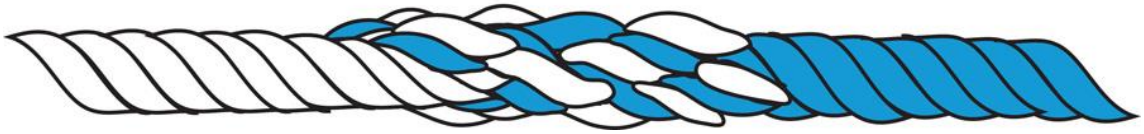


3. Make the first tuck under the nearest strand.



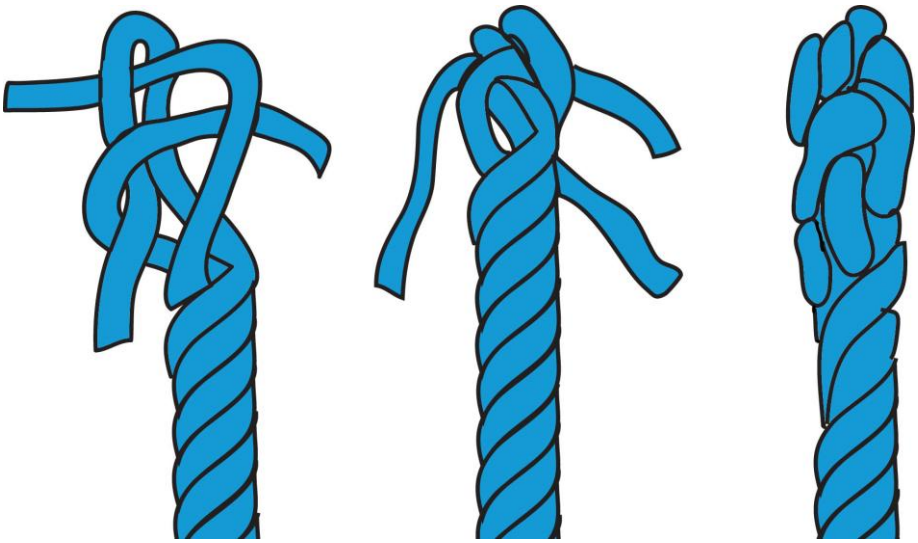
4. Cross and tuck each strand at nearly right angles.

5. Divide each strand into two parts and take two or more tucks with each half strand.

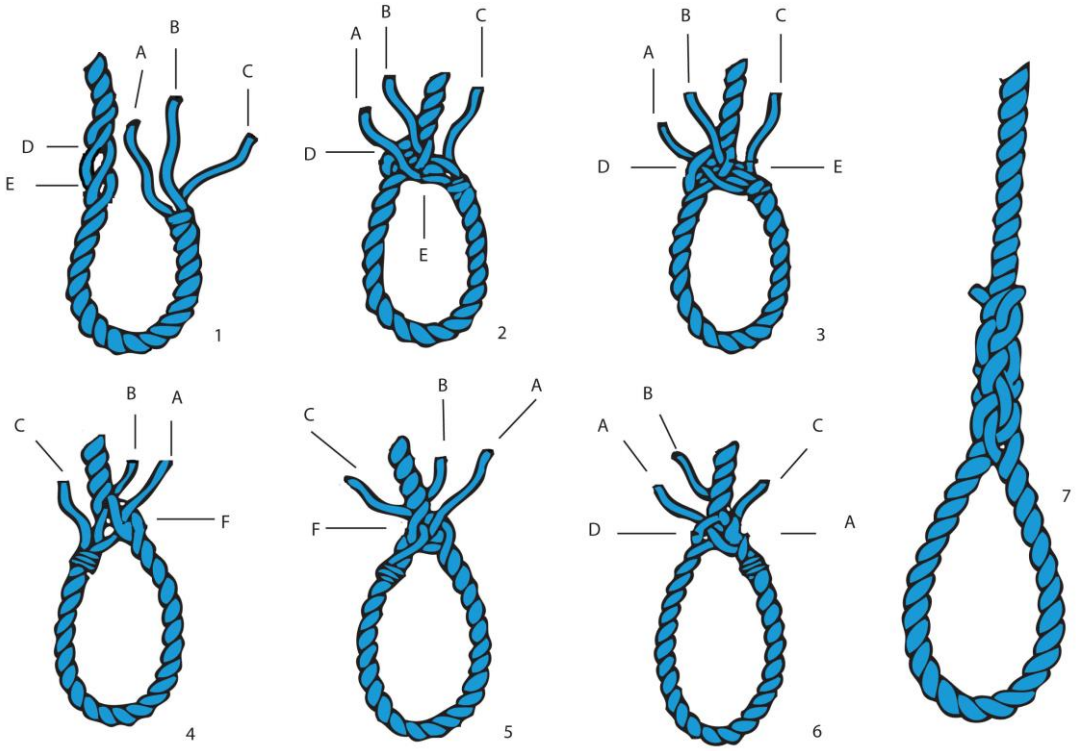


6. Cut off all loose ends and roll on a hard surface.

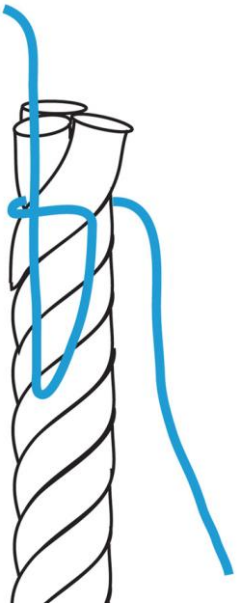
3.1.6.2 Back Splice (End Splice)



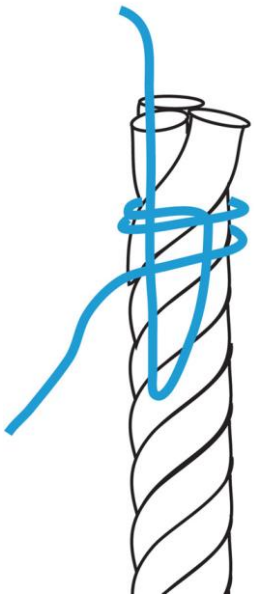
3.1.6.3 Eye Splice



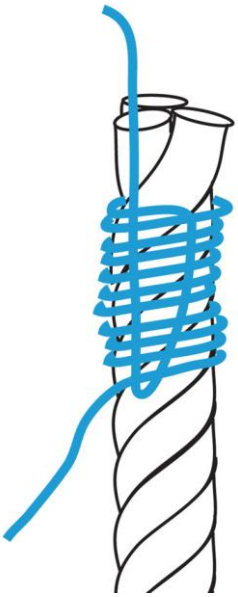
3.1.6.4 Common Whipping



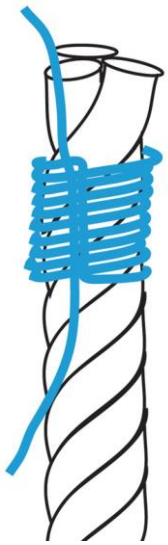
1. Form a loop facing away from the end of the rope, leaving one short end and one long end of whipping twine.



2. Pass the long end of the twine over the short end and around the rope.



3. Keep passing the twine around the rope until the correct length is achieved. Pass the long end of the twine through the loop.

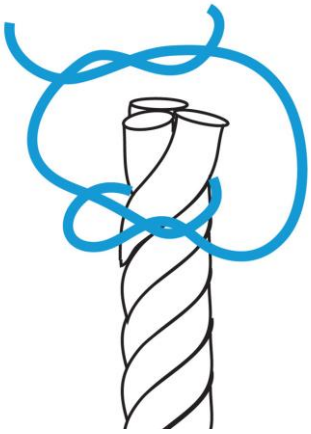


4. Pull the short end of the twine until the long end is buried about half way under the whipping. Now pull each end of the twine with equal strength until the whipping is tight. Trim off the loose ends.

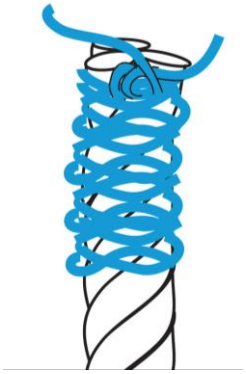
3.1.6.5 West Countryman's Whipping

1. Take a turn around the rope with the twine and form the first overhand knot, ensuring that the two ends of twine left are of roughly equal length.

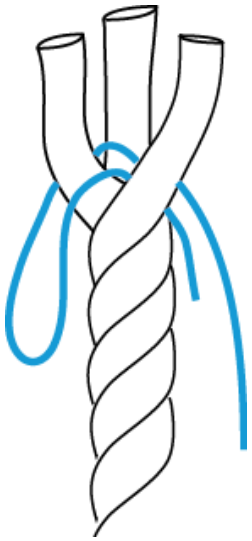
2. Take another half turn around the rope with each length of twine and form a second overhand knot on the other side of the rope.



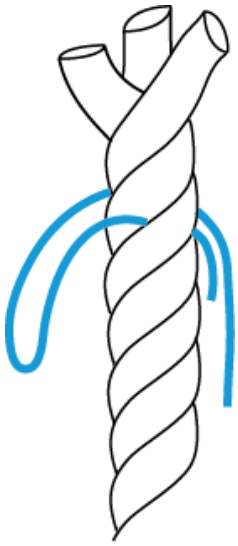
3. Continue tying overhand knots in such a way that the knots alternate all the way up the rope. Finish off with a reef knot – in other words, two overhand knots, one on top of the other.



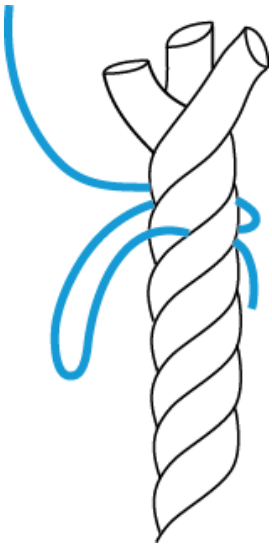
3.1.6.6 Sailmakers' Whipping

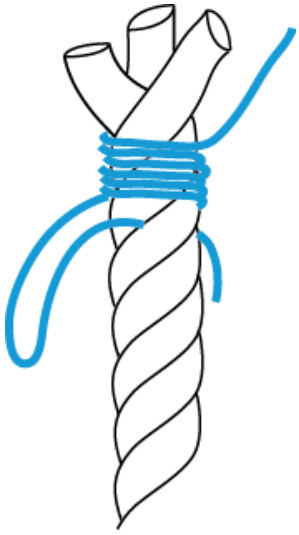


1. Unlay the rope for about 50mm and form a loop around a strand with the whipping twine. The two ends of the twine should emerge together opposite the strand with the loop.

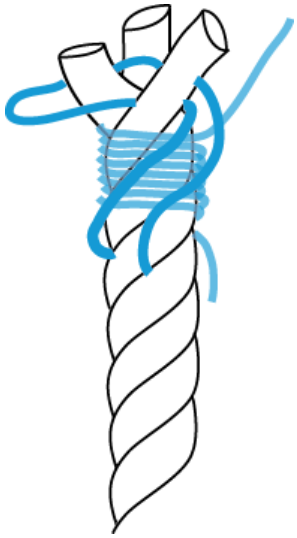


2. Lay the rope back up and adjust the twine so that the loop and one end of twine are approximately 100mm in length. The other end should be about 400mm in length.

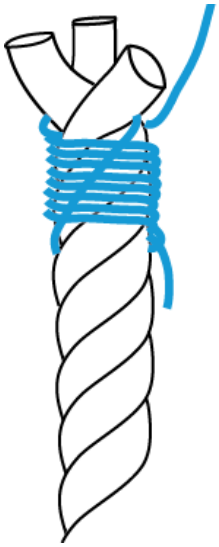




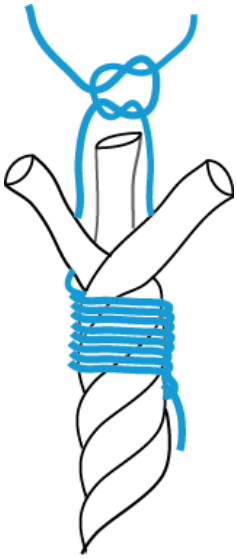
3. Holding the loop and short end of the twine with the rope in one hand, use the other hand to wind the long end of twine around the rope away from the loop and short end of twine.



4. Pass the loop around the end of the strand in such a way that the twine rests in the space between the strands.

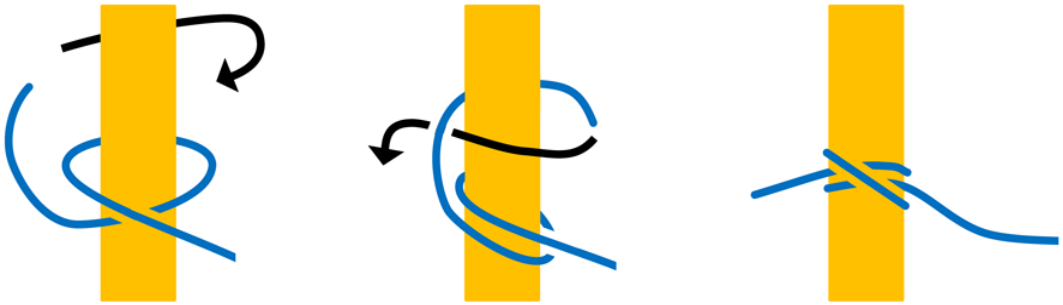


5. Tighten the loop by pulling the short end of the twine.



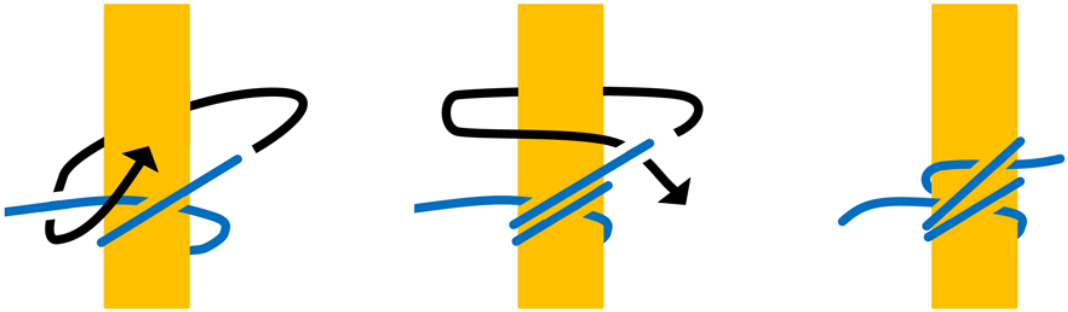
6. Now follow the groove left between the strands with the short end of twine and join the ends of twine with a reef knot in the middle of the rope.

3.1.6.7 Clove Hitch around a Tube



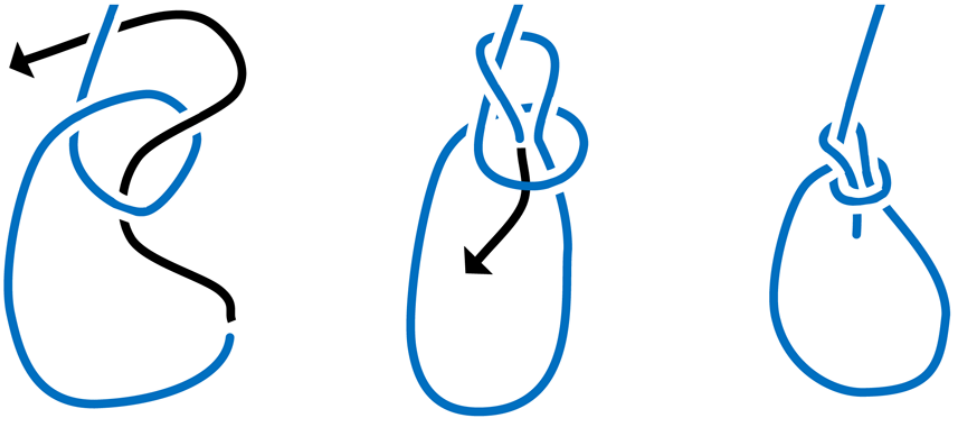
This is used to commence rope lashing. It is not safe for other purposes unless the ends are secured with an additional half-hitch.

3.1.6.8 Rolling Hitch around a Tube



This is used to secure a stopper, or two ropes pulling in opposite directions. It is preferable to a clove hitch or blackwall hitch, as long as rolling turns are put on in the proper direction of pull.

3.1.6.9 Single Bowline

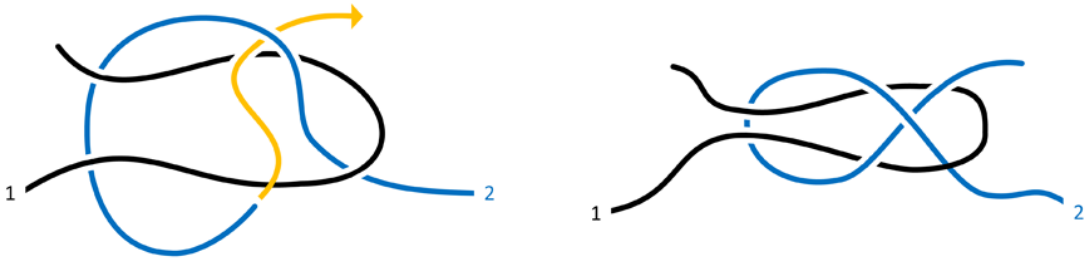


This is used for making a temporary eye in the end of a rope.

3.1.6.10 Timber Hitch and Half Hitch Around a Plank

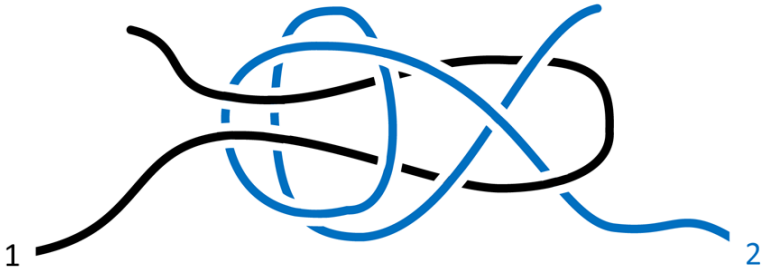
Useful for hoisting lengths of timber. Only safe when an additional half hitch is put on the end of the hauling part.

3.1.6.11 Sheet Bend to Another Rope



Used to join two dry ropes of different sizes. Safer when a double sheet bend is used. The smaller rope must be bent around the larger rope.

Double Sheet Bend



3.1.7 Installing a Gin Wheel

Gin wheels can be extremely useful in shifting materials from the ground up to a working platform on the scaffold, where the height does not allow for passing materials up by hand.

Gin wheels work as a sheave or pulley and use ropes to raise and lower materials.

It is important that a gin wheel is installed properly to ensure that the scaffold is stable and that loads can be safely moved up to the scaffold work platform.

If the gin wheel is installed on an unbraced cantilevered scaffold tube, it should be positioned no more than 600mm out from the scaffold edge.

If the gin wheel needs to sit further out than this you will need to brace the supporting cantilevered tube.

If using a ring-type gin wheel, you should fix couplers to the tube on either side of it to prevent unwanted movement along the tube.

If using a hook type gin wheel, it should be securely lashed to the supporting scaffold tube. If the gin wheel is a hook-type and is not fitted with a safety catch you must not use it. It should be isolated (tagged) and removed from service. Report the defect in accordance with procedures.

Under no circumstances should a gin wheel be suspended from a right angle coupler.

3.1.8 Installing a Safety Net

Industrial safety nets are sometimes used as an effective means of fall protection for those working at heights where it is not practicable to provide scaffolds or temporary guard railings.

When combined with overlay nets of finer mesh size, they can also be used to contain falling debris.

Safety nets must be securely anchored before any work starts. They must also be constructed of material strong enough to catch a falling person or object.

The label attached to each net will state a maximum fall distance for which the net has been designed. This will be either 1m or 6m.

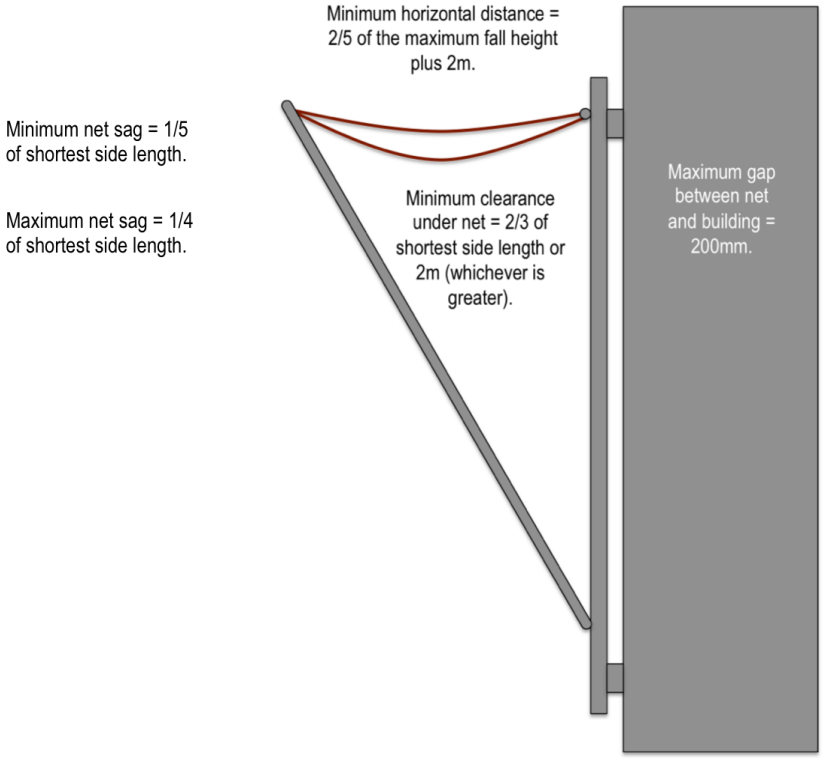
The mesh should not be larger than 100mm x 100mm.

Prior to the installation of a safety net, the intended configuration, method of attachment and strength of the supporting structure should be verified as adequate by a competent person such as an engineer experienced in structural design.

The verification should be in writing and retained on site until the net has been dismantled.

Safety nets must be positioned and installed in accordance with a number of safety requirements. These requirements determine the minimum and maximum allowable sag in the net, the minimum clearance beneath the net and the distances relating to the net and the structure it is attached to.

The diagram below illustrates these requirements:



The **minimum horizontal distance** of outrigged safety nets is 2/5 of the maximum fall height plus 2m. For example a net with a maximum fall height of 1m must be outrigged at least 2.4m.

The **minimum clearance under the net** is 2/3 of the shortest side length or 2m (whichever is greater). For example if the shortest side of the net is 2.4m the clearance would be 2m. This is because 2/3 of 2.4m is equal to 1.6m (which is smaller than 2m).

The **minimum initial sag in the net** is equal to 1/5 of the shortest side length. If we use the same example with 2.4m as the shortest side length, the minimum allowable sag in the net is 0.48m.

The **maximum initial sag in the net** is equal to 1/4 of the shortest side length. If the shortest side is 2.4m the maximum allowable sag is 0.6m.

3.1.9 Static Lines

There are many types of fall-arrest systems available. One of the most common types associated with scaffolding operations is called a 'Static Line'.

Static lines are horizontal lines to which a lanyard may be attached and which is designed to arrest a free fall.

These provide a suitable anchor point for a fall-arrest system, while still allowing a limited range of movement along the path of the line.

It is important that the static line is properly tensioned. Generally, the maximum allowable length of a single span of static line is 6m. For a static line this long the maximum allowable sag is 300mm (calculated as 50mm per metre).

A ratchet and pawl, or similar tensioning device, can be used to tension the static line **IF** permitted by the manufacturer or engineer and the amount of tensioning has been specified.

These lines must be installed and checked regularly by a competent person and must only be used in accordance with the manufacturer's specifications, including limits relating to the number of workers connected to the line at one time.

Wherever possible, life lines and static lines should be as high as the situation safely allows to limit the free fall distance of workers connected to it. Generally this should not be less than 2.1m from the floor of the work area.

3.1.9.1 Anchor Points

Anchor, or anchorage, points should be located as high as equipment permits, as it is safer to work below the point of anchorage.

Where the anchorage point is below the harness connection point, a shorter lanyard may be required.

The anchor point on a single span static line used for scaffolding operations needs to be capable of holding a weight of 4 tonnes.

You can determine the capabilities of an anchorage by checking the manufacturer's specifications and installation instructions.

Anchorages and lines between supports should be positioned on the inside face of columns where practicable and used to anchor static lines, or the static line may pass through a cavity tube cast in concrete for that purpose.

Static lines between supports must be free of obstructions to allow uninterrupted movement for persons who may be attached to the line. If a line passes around a column, corner, or other sharp edge, it should be packed to prevent damage to the line.

Static lines may be secured at each end using suitable equipment such as:

- Double saddle clamps.
- Machine splice with thimble eye.
- Suitable wedge sockets.
- Purpose-designed fittings such as swaged or pressed fittings.

However, if the static line is being installed into concrete you must use approved anchorages such as:

- Cast in anchorages.
- Chemical.
- Mechanical – only where assessed and approved by a competent person such as an experienced engineer.

These need to be proof tested by an engineer or competent person.

Eyebolts may be used as anchorage points, however you must make sure they are collared as these can withstand more sideways pressure than plain or un-collared eyebolts.

Collared eyebolts help to spread the load and assist in ensuring that the eyebolt does not shear at the bolt point.

Turnbuckles may be used to attach static lines to eyebolts as long as they are open-framed, allowing for inspection.

3.1.10 Installing a Materials Hoist

Materials hoists run up and down the outside of a tower using a wire rope hoisting system for raising and lowering the platform.

Under no circumstance can these hoists be used to carry passengers.

Only certificated personnel carrying out erection, dismantling and maintenance can ride on the platform of a materials-only hoist.

The hoist must be set up on solid timber packing.

Clear signage should indicate that no persons are allowed to ride on the materials hoist platform.

Always refer to the manufacturer's operating manual for directions on how to set up and operate the materials hoist safely.

When setting up near a trench, the distance between the base of the tower and the edge of the trench must be greater than the depth of the trench (e.g. 3m away from a 2m trench).

At the base of the tower a handrail, with a moveable or sliding rail to allow access to the platform, must be set back at least 600mm from the working platform to stop people from leaning over and being hit by the moving platform.

The landing gate for the platform must be a minimum of 1.8m high.

On the floors above, a handrail must be placed 600mm from the edge of floors to prevent people falling off.

There must be an overhead guard to protect the operator from falling objects.

The hoist must not be set up in front of any access way to a building (such as a doorway or a window) unless it is blocked off to stop people leaning out and being hit by the passing platform.

The gap between the platform floor and the building floor must be no less than 25mm and no more than 100mm.

The tower must be guyed or tied every 6m and have no more than 3m free standing above the top tie.

Guy ropes must be at least 9mm in diameter for hoists to 500kg capacity and at least 12mm for more than 500kg (and 6 x 19 construction).

The minimum over-run distance between the hoist rope attachment and the head sheave is 1.5m.

Once the hoist is completed check that it complies with the installation specifications. You also need to make sure you install signage displaying the rated capacity of the hoist.

3.2 Inspection and Maintenance of Scaffolds

Once the scaffold has been erected it will need to be inspected by a competent person.

- Check that the scaffold is stable, level and plumb.
- Check that no components are missing or damaged.
- Check the condition of platforms.
- Check the security of ties.
- Check there is suitable access and that ladders are secure.
- Check the completed scaffold against the original plans.

Once a scaffold erection, inspection or modification is completed, a licenced scaffolder needs to place an inspection record on the scaffold.

The inspection record needs to include the following details:

Record Detail	Explanation
Location	Unit / plant number followed by area of plant.
Ref. No.	Work Order number.
Date Erected	Date the erection of the scaffold was complete.
Requested By	This should be the Team leader/Plant Area Coordinator etc., requesting the scaffold. (This may be on the Work Order).
Built By	This is the company who built the scaffold.
Name of Competent Person	Print the name of the competent person/certified scaffolder.
Signature	Signature of competent person/certified scaffolder.
Light Duty 225kg	**As per AS/NZS 4576.**
Medium Duty 450kg	
Heavy Duty 675kg	

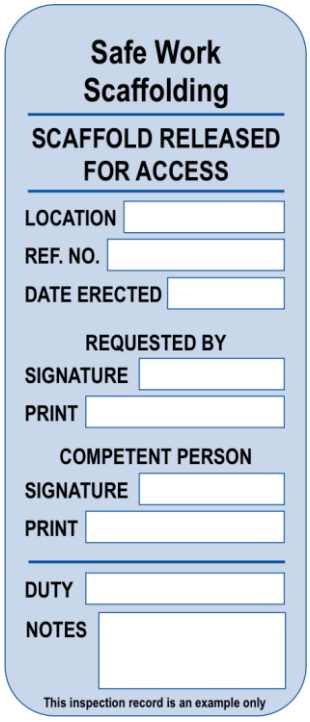
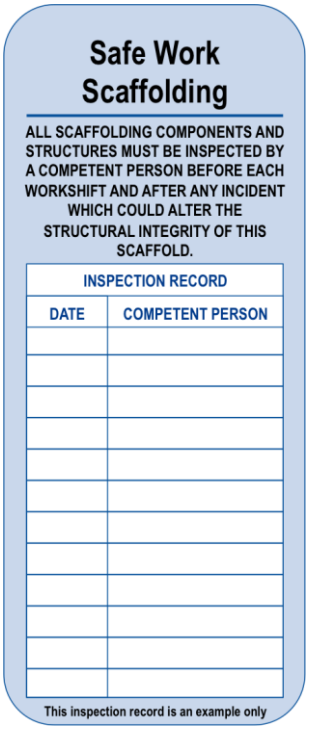
3.2.1 Modifying or Inspecting a Scaffold

Where practicable, the competent person/certified scaffolder who erected the scaffold, and whose name appears on the inspection record, is to be the person to perform scaffold modifications and inspections.

Prior to modifying scaffold, the scaffolder is to:

- Remove the inspection record.
- Replace with a notification inspection record detailing the date and time of the modification or inspection, the name of the person performing the modification or inspection and the reason for the alteration where relevant.

Shown here is an example of an inspection record system of cards:

Inspection Record Card Holder	Inspection Record Front	Inspection Record Back
		

3.2.2 Completing a Handover Certificate

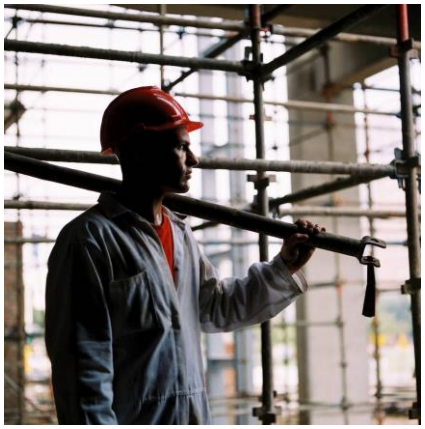
You will need to complete a handover certificate when the scaffold is complete.

It should contain the following information:

- The name of the client that the work has been done for.
- Address of the worksite where the tasks were completed.
- The location of the scaffold in the worksite.
- The type of scaffold that was erected (e.g. modular, mobile).
- The height and length of the scaffold.
- The number of lifts and bays in the scaffold.
- The duty category of the scaffold (e.g. light, medium, heavy, special).
- The type of access available (e.g. ladder, ramp, stairway).
- Design reference number.
- Date and time of handover.
- Name and signature of the responsible person.

An example of a handover certificate can be found in Appendix C.

3.3 Dismantle Scaffold and Scaffold Equipment



Dismantle the scaffold according to the correct procedures.

- Work safely at heights utilising safety equipment such as fall-arrest systems (e.g. harness and lanyard).
- Start from the highest lift and dismantle the scaffold downwards one lift at a time.
- Only remove ties and braces from the lift you are dismantling.
- Do not remove all the ties and braces first.
- Clear the platforms of all equipment and loose material.

Always follow the manufacturer's instructions when disassembling equipment to ensure the safety of all personnel in the area, to maintain stability during the process and to prevent any damage to the plant and equipment.

Once they are no longer needed, safety systems such as static lines, fall-arrest harnesses and safety nets should be dismantled according to the correct sequence and procedures.

They should then be removed from the work area.

Always work methodically and follow site procedures to avoid any unplanned collapse of plant and equipment.

Unplanned collapse can result in serious injuries to personnel and damage to equipment and materials.

3.4 Incidents and Emergency Response

Emergencies can happen quickly and without warning when work is being done at heights.

If all necessary precautions, hazard control measures and safety equipment have been used then the risk of serious consequences is reduced.

However you should always be prepared to take action in an emergency situation, even if that action is as simple as calling for help.

3.4.1 What is an Incident?

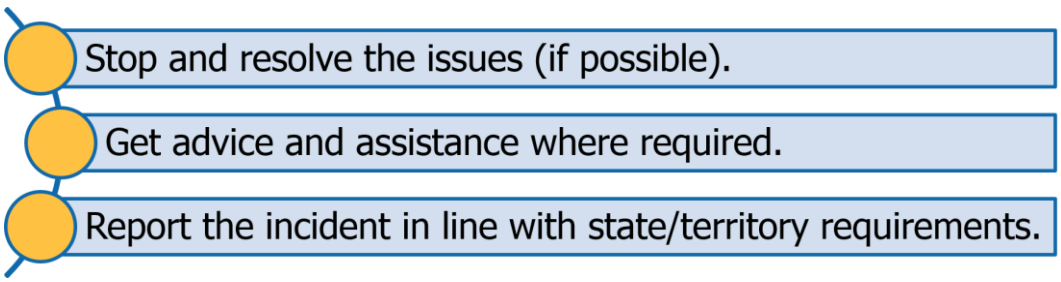
An incident is:

- An accident resulting in personal injury or damage to property.
- A near miss or dangerous occurrence which does not cause injury but may pose an immediate and significant risk to persons or property, and needs to be reported so that action can be taken to prevent recurrence.

All incidents **MUST** be reported!

3.4.1.1 Responding to an Incident

If an unsafe incident or event occurs during scaffolding operations you should:



3.4.2 Workplace Emergencies

Site emergencies may include:

- Injury to personnel.
- Fire (electrical, chemical, gas, mechanical, paper, wood or natural).
- Gas leak.
- Toxic and/or flammable vapour emissions.
- Vehicle/machine accident.
- Chemical spill.
- Structural collapse.

3.4.2.1 General Emergency Response

In the case of an emergency:

1. Remain calm.
2. Raise the alarm with your supervisor, safety officer, other people at the workplace and emergency services (Dial 000).
3. Communicate the following details:
   a) That there is an emergency situation.
   b) The nature of the emergency.
   c) Where any unsafe areas are.
4. Evacuate if necessary (refer to site emergency plans).

3.4.2.2 General First Aid

First Aid kits must be supplied by your employer. The location of these kits should be clearly marked with signage.

In the case of an emergency where somebody requires first aid, notify your supervisor or first aid officer and they will take action.

3.4.3 Incident Relating to the Use of Fall-Arrest Systems

If a worker who is using an individual fall-arrest system falls from an edge, the system may act as a pendulum.

This may result in the worker hitting the ground (called 'swing down') or swinging back into the building or structure (called 'swing back').

These situations may also be referred to as 'the pendulum effect'.

Swing down can occur if the lanyard slides back along the perimeter edge of the roof as a worker falls, until it is vertical.

When this happens, the worker may hit the ground (or lower level), or the lanyard may break from being dragged across the edge of the roof.

3.4.3.1 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.

The lower legs' capacity to store large amounts of blood reduces the return of blood to the heart, slowing the heart rate, which can cause the person to faint.

This may lead to renal failure and eventually death, depending on a person's susceptibility. This condition may be worsened by heat and dehydration.

3.4.3.2 Preventing Suspension Trauma

The following techniques can be used to help prevent suspension trauma in a person who is hanging in a fall-arrest harness:

- Never work alone when using a harness as fall protection.
- Wherever possible use a fall-arrest harness that allows the legs to be kept horizontal.
- If possible keep the time a worker spends in suspension after a fall limited to less than five minutes. This can be achieved by providing foothold straps or a way of placing weight on the legs.

If you find yourself in a situation where you are suspended in a fall-arrest harness after a fall, attempt the following action:

1. Move your legs in the harness and push against any footholds to relieve pressure on your upper legs.
2. Move your legs as high as possible and tilt back so that you become as horizontal as possible.

The quickest possible rescue of a person suspended in a full body harness is vital.

For this reason, workers should be capable of conducting a rescue of a fallen worker and be familiar with on site rescue equipment and procedures.

If a worker has fallen and is hanging suspended in a safety harness for a prolonged period of time (5 to 30 minutes) it is absolutely vital that first aid procedures are implemented as quickly as possible.

3.4.3.3 First Aid for Suspension Trauma

In accordance with Australian Resuscitation Council (ARC) guideline 9.1.5, first aid management of suspension trauma should be carried out as follows:

1. Call for an ambulance (dial 000 or 112).
2. If unconscious, manage the victim according to basic life support principles. If conscious, rest the victim in a comfortable position, ideally lying down, and provide reassurance.
3. Loosen or remove the harness.
4. Administer oxygen if available.
5. Look for and manage associated injuries in the victim, especially if they have fallen or been electrocuted.
6. Monitor the signs of life at frequent intervals.

Remember, care of the airway takes precedence over any injury.

3.4.4 Report All Hazards, Incidents and Injuries

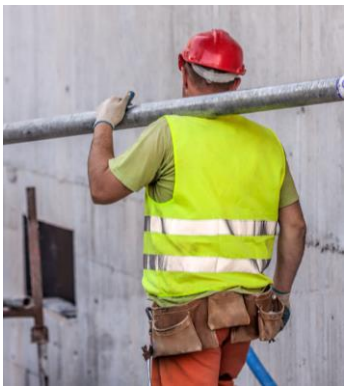
Depending on the nature and severity of the situation you may need to report to:

- Your supervisor.
- Emergency services (e.g. police, ambulance, fire brigade and emergency rescue).
- WHS regulatory authority (e.g. WorkSafe, WorkCover).

Ask your WHS representative or supervisor at the site office for the relevant forms and procedures for reporting hazards, incidents and injuries.

3.5 Conclude Scaffolding Operations

Once the scaffolding task has been completed you will need to carry out any other tasks as required by site procedures.



This may include:

- Tidying the work area and removing rubbish or materials from the site.
- Inspecting scaffolding and associated equipment for defects.
- Isolating defective equipment in accordance with procedures and recording and reporting defects.
- Removing hazard control measures.

3.5.1 Tidy the Work Area

Once the work has been completed you need to clean up the work area. Remove any leftover materials and debris created by the task.

Litter and other building debris can cause a tripping hazard for personnel. Make sure all rubbish is collected and disposed of correctly.

Dispose of any debris properly without impacting negatively on the environment. Make sure all materials are collected and removed properly.

Divide up recycling and other waste materials for correct removal and processing.

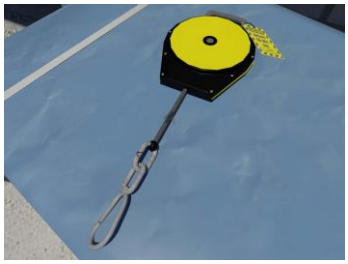
3.5.2 Inspect and Store All Scaffolding Equipment

All equipment needs to be inspected once all scaffolding operations have been completed. Check for any damage that may have occurred while the equipment was in use. The manufacturer's instructions may have inspection checklists relating to different types of equipment that should be referred to.

Make sure that you clean the equipment if necessary and that all scaffolding equipment and parts are stored correctly in accordance with site procedures.

3.5.2.1 Isolate Faulty Equipment and Report Defects

Any defective equipment needs to be properly isolated and removed from service to prevent anybody from accidentally using it.



Standard procedures for isolating equipment and recording and reporting defects need to be followed.

3.5.3 Remove Hazard Control Measures

Any hazard controls that are no longer required need to be removed from the work area and stored according to procedures.

Inform any relevant personnel that the work area has been returned to normal conditions and that your tasks have been completed.

Appendix A – Safe Work Method Statement

SWMS Name:	SWMS Created By:	Date of Creation:
SWMS Summary:		Last Reviewed Date:

Company/Contractor Details:	**Project Details:**
Name:	Client:
ABN:	Contact Name:
Address:	Site Address:
Contact Number:	Contact Number:
Email:	Start Date:

How to complete this SWMS:
1. CONSULT: Consult with all persons who will be involved in the completion of the work.
2. LIST: List each of the steps in the task work being done.
3. IDENTIFY: Describe the health and safety hazards and risks arising from each step in the work.
4. RISK ASSESSMENT: Review the level of risk associated with each hazard listed.
5. CONTROL: Describe how the risks will be controlled, and describe what hazard control measures will be put in place.
6. RESPONSIBILITY: Allocate a person to be responsible for the hazard control measure.
7. REVIEW: Review the effectiveness of the control measures and apply further hazard control measures as required.

Training/Qualifications Required To Carry Out Work: Are All Workers Adequately Trained And Qualified? Yes / No	PPE Required To Carry Out Work:
Legislation, Australian Standards & Codes Of Practice Relevant To Work (Where Applicable):	Equipment Required To Carry Out Work:
Environmental Statement:	Safety Checks Required Prior To Commencement Of Work:
Coordination With Other Trades:	Permits Required For Commencement Of Work: Have These Permits Been Acquired? Yes / No

Risk Analysis Matrix

Use this table to determine the level of risk associated with an identified hazard.

	Consequence				
Likelihood	**1. Insignificant**	**2. Minor** First Aid Required	**3. Moderate** Medical Attention and Time Off Work	**4. Major** Long Term Illness or Serious Injury	**5. Catastrophic** Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	Extreme	Extreme

Risk Level	Action
Extreme	**This is an unacceptable risk level** The task, process or activity **must not proceed**.
High	**This is an unacceptable risk level** The proposed activity can only proceed, provided that: **1.** The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. **2.** The risk controls must include those identified in legislation, Australian Standards, Codes of Practice etc. **3.** The risk assessment has been reviewed and approved by the Supervisor. **4.** A Safe Working Procedure or Work Method Statement has been prepared. The supervisor must review and document the effectiveness of the implemented risk controls.
Moderate	**This is an unacceptable risk level** The proposed activity can only proceed, provided that: **1.** The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. **2.** The risk assessment has been reviewed and approved by the Supervisor. **3.** A Safe Working Procedure or Work Method Statement has been prepared.
Low	The proposed task or process needs to be managed by documented routine procedures, which must include application of the hierarchy of controls.

Safe Work Method Statement

Work Step	Associated/Identified Hazards	Risk Level	Hazard Controls	Revised Risk Level	Person Responsible
Work your way through each step in the work process, giving a brief description of what is required at each stage.	What hazards can be identified for this step?	What is the risk level?	What hazards controls will be put into place to deal with the identified hazards for this step?	Has the risk been reduced?	Who is responsible for carrying out the work and maintaining the hazard controls?

Work Step	Associated/Identified Hazards	Risk Level	Hazard Controls	Revised Risk Level	Person Responsible
Work your way through each step in the work process, giving a brief description of what is required at each stage.	What hazards can be identified for this step?	What is the risk level?	What hazards controls will be put into place to deal with the identified hazards for this step?	Has the risk been reduced?	Who is responsible for carrying out the work and maintaining the hazard controls?

Personnel Signoff

All personnel required to carry out this task need to be listed below.

By signing this SWMS, each person declares that they have carefully read the SWMS and that they understand their responsibilities and requirements to complete the work.

Name (please print)	Position / Qualification	Signature	Date

Senior Management Signoff

Does this SWMS meet the necessary safety requirements? Yes / No

Does this SWMS require review? Yes / No Review Date:

Additional Comments:			
Name:	Position:	Signature:	Date:

Appendix B – How to Identify Confined Spaces

It is very important that you have the ability to correctly identify a confined space in order to take appropriate actions such as obtaining permits and using safety equipment.

What Is A Confined Space?

The Australian Standard (AS 2865-2009) defines a confined space as an enclosed or partially enclosed space that is not intended or designed primarily for human occupancy, within which there is a risk of one or more of the following:

- An oxygen concentration outside the safe oxygen range.
- A concentration of flammable airborne contaminant that may cause injury from fire or explosion.
- Engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning.
- A concentration of airborne contaminant that may cause impairment, loss of consciousness or asphyxiation.

Confined spaces may include:

- Culverts and storm water systems.
- Shafts, duct and access chambers.
- Environmental traps and tanks.
- Natural features such as caves and pits.
- Tank cars.
- Pits, trenches and gullies.
- Box girders and bridge voids.
- Pipes and live or inactive sewer mains / tunnels.

A person is deemed to have entered a confined space when their head (i.e. the breathing zone) or upper part of the body is within the boundary of the confined space.

(Note that inserting an arm for atmospheric testing is not considered an entry into a confined space).

You can use a table similar to the one shown below to determine if the work area is classified as a confined space (answer all questions):

Question	Yes or No
1. Is the space enclosed or partially enclosed?	
2. Is the space not designed or intended primarily to be occupied by a person?	
3. Is the space designed or intended to be at normal atmospheric pressure while any person is in the space?	
4. Could the atmosphere have oxygen concentration outside of the safe oxygen range?	
5. Could the atmosphere have a concentration of airborne contaminant that may cause fire or explosion?	
6. Could the atmosphere have harmful concentrations of any airborne contaminants?	
7. Could there be a risk of engulfment?	
A space is classified as confined if you answer YES to all of questions 1-3 AND at least 1 of questions 4-7.	

Appendix C – Handover Certificate

Handover Certificate					Handover Date:	
					Handover Time:	
Client Name:					**Contact Name:**	
Worksite Address:					**Scaffold Location On Site:**	
Type Of Scaffold:						
Duty Category (Please Circle)	Light	Medium	Heavy	Special		
Number Of Lifts:					**Height Of Scaffold:**	
Number Of Bays:					**Length Of Scaffold:**	
Type Of Access:					**Design Reference Number:**	
NOTES:						
Name Of Person Responsible:						
Signature Of Person Responsible:						