SOP - Erect scaffold

DO NOT use this plant unless you have been inducted in its safe use and operation by an Authorised Experienced Operator and have been given permission.

This SOP may not cover all possible hazards and risks associated with this equipment and should be referred to as a control measure in the risk assessment process. Site and task may change required PPE. Additional SOP will be required for Plant and tools used

PERSONAL PROTECTIVE EQUIPMENT

You must wear this personal protective equipment when doing this task

					
Hardhat	Eye	Gloves	Harness	Hi Viz	Boots

OTHER SIGNAGE

POTENTIAL HAZARDS ASSOCIATED WITH RISKS

Recurring Hazards	Construction work
Damage to Property	Environment
Public areas	Outdoor work
Heights	Utilities & Services

Training Required:

- ✓ Construction Industry General Induction
- ✓ Site Induction
- ✓ Task induction
- ✓ Heights
- ✓ Scaffold

Licence or VOC Required: Yes

Pre-Operational Safety Checks:

- ✓ Complete site-specific risk assessment
- ✓ Workers trained & Competent
- ✓ Services isolated if required
- ✓ Public is protected
- ✓ Property is protected
- ✓ Control measures have been implemented
- ✓ It is safe to proceed

Consultation

- ✓ SWMS has been reviewed
- ✓ Site induction completed
- ✓ Toolbox talk held
- ✓ Discussed with other PCBU
- ✓ Potential emergencies considered

Tools & equipment required

- ✓ As selected for the required task
- ✓ Harness
- ✓ Scaffold

Operating Procedures:

Planning & Preparation

- ✓ Conduct a task specific Risk Assessment
- ✓ I have all the tools and materials required
- ✓ I understand the instructions on the task
- ✓ Ensure adequate lighting
- ✓ Exclusion zones
- ✓ Harness, lanyard and fall arrest ropes

- ✓ Safety anchor points installed
- ✓ Access
- ✓ Powerlines

Doing

- ✓ All nominated control measures are used
- ✓ Follow SWMS, SOP and Risk Assessment
- ✓ Follow methodology at end of this document

Ending Operations / Housekeeping:

- ✓ Return all tools and equipment
- ✓ Waste is recycled or disposed of
- ✓ Clean up your mess
- ✓ Store non-disposable PPE to prevent damage
- ✓ Report to your Supervisor

Monitor & Review Process

- ✓ If unsafe STOP, review get approval
- ✓ Supervisor to check all activities
- ✓ Task MUST be completed as per SOP
- ✓ Report to your Supervisor if unsure

DO NOT!

- × **Alter this SOP without Management approval**

Applicable Legislation / Standards:

- ✓ WH&S Act & Regulations

Codes of Practice –

First aid in the workplace
Work health and safety consultation, co-operation and co-ordination
Managing noise and preventing hearing loss at work
How to manage and control asbestos in the workplace
How to manage work health and safety risks
Hazardous manual tasks
Managing the work environment and facilities
Manual tasks involving the handling of people
Managing the risk of falls at workplaces
Electrical safety - Works
Electrical safety - Managing electrical risks in the workplace

- ✓ Standards

AS 1319 Safety signs for the occupational environment

AS 1873.3 Powder-actuated hand-held fastening tools

AS 1891.4 Industrial fall-arrest systems and device

AS 1892.1 Portable ladders - Metal

AS 1892.2 Portable ladders – Timber

AS 1892.5 Portable ladders - Selection, safe use a ladder

AS 2293 .2 emergency evacuation

AS 3017 Electrical installations - Testing and inspection

ISO45001 OH&S management systems
ISO 31000 Risk management

Methodology for Scaffolding

Scaffold Plan

A scaffold plan should be prepared and provided by the employer or self-employed person doing scaffold work. To develop an effective and useful scaffold plan consult with:

- the scaffold designer, for example, to discuss the design loads and the capability of the structure to support any additional loadings;
- the builder or Principal or Head Contractor, for example, to assess the location of underground drains or pits. The work should be planned so as to avoid excavating service trenches under, through or adjacent to scaffolds; and
- workers, workplace health and safety committees, workplace health and safety officers and workplace health and safety representatives, regarding erecting, dismantling, maintaining and altering the scaffolding.

The scaffold plan should include a site layout plan and detail the elevations and sections of the scaffold. It is to be made available for inspection at the worksite.

- The scaffold plan should address the following issues.
  - basis of design
  - foundations (including ground conditions and loadings)
  - supporting structure
  - access and egress
  - tying
  - bracing
  - type of scaffold

- edge protection

Certificates for High-Risk Works

Under the OHS Regulation, a person must hold a basic, intermediate or advanced scaffolder certificate if a person or thing may fall more than 4 metres from the scaffold.

Note: *The 4 metres height threshold for these certificates is separate to the OHS Regulation requirements for 3 metres (housing construction work) or 2.0metres (other construction work) fall from height thresholds. (Refer to section 6.2 Risk of a fall of at least 3 metres or 2.0metres).*

Trainees

Trainees are permitted to perform work in a High-Risk Work, provided the trainee is adequately supervised by a ticketed person who is on site, and a written record outlining the training received (i.e. a logbook), is maintained.

Mixing and Matching Scaffold Components

Components from different manufacturers or suppliers, while looking compatible, are often of different dimensions and tolerances. Mixing and matching incompatible scaffold components can lead to difficulties in disassembly which in turn may increase the risk of musculoskeletal injury; increase wear on the components; and affect the load capacity of the scaffold.

Protecting Members of the Public

Containment screening is a control measure that may be used to protect members of the public from falling objects. The following are examples of control measures that may be used to prevent or minimise exposure to the risk of being hit by falling objects.

- Establish exclusion zones around scaffolding and adjoining areas to prevent unauthorised persons from accessing the area
- Use perimeter containment screening (see also section *Perimeter containment screening*), scaffold fans, hoardings or gantries to contain falling objects
- Erect and dismantle scaffold in built-up areas during quiet times
- Never drop materials from a scaffold – use mechanical hoists to move materials
- Attach danger tags and warning signs such as ‘ Keep Out – Falling Objects ’and’ Danger – Incomplete Scaffolding ’ in obvious locations to warn persons of hazards

Job Organisation

- Store scaffolding components as close as practical to the work area in order to minimise the distance over which loads are manually moved. Clear access ways should also be ensured so that materials and equipment can be easily accessed
- Use the appropriate tools for the work performed and avoid over tightening scaffold couplers which results in the need for greater force when loosening them during the dismantling stage
- Incorporate rest breaks or task variety into the job where the risk cannot be prevented or minimised
- Ensure there are adequate numbers of workers to meet deadlines

Mechanical aids

- Use mechanical aids such as cranes, hoists, pallet jacks or trolleys to move equipment and materials wherever possible (for example, when lifting bundles of components, moving components/materials around the site, or unloading vehicles). Team lifting is not a preferred method for load handling and should only be used as a last resort when mechanical aids cannot be used or the work cannot be redesigned. Workers must be trained in team lifting techniques and adequate numbers of workers must be provided
- Use electric winches (preferred) or gin wheels to lift components up the scaffold

Task specific training

Workers should be provided with education and training in relation to the performance of manual tasks. This includes training in the correct use of mechanical devices, tools and equipment, as well as safe performance of the specific manual tasks and handling methods (for example, team lifting).

Stability

Scaffold stability may be achieved by:

- tying the scaffold to a supporting structure
- guying to a supporting structure

- increasing the dead load by securely attaching counterweights near the base
- adding bays to increase the base dimension

Tying

Tie methods and spacing need to be in accordance with the instructions of the manufacturer, designer or supplier.
Outlined below are safe work practices and control measures for tying scaffold.
Consult with the scaffold designer, manufacturer, supplier or an engineer if it is not practical to position the ties in accordance with the instructions.
More ties may be required if:

- the scaffold is sheeted or netted due to increased wind loadings;
- it is used as a loading platform for materials or equipment; and
- attaching lifting appliances or rubbish chutes.

The Principal or Head Contractor, employer or self-employed person should have a competent person regularly inspect the existence and effectiveness of scaffold ties to ensure they are not modified or altered by unauthorised persons (for example, finishing trades who may loosen, relocate or remove ties to obtain access to walls and openings).

- Consult with the scaffold designer or supplier before attaching additional loads on the scaffold, for example, signs and perimeter containment screens
- Cast-in anchors or ' through bolts ' (i.e. pass through a wall) are preferred to drill-in expansion or chemical anchors for securing scaffold ties because of possible failure due to faulty tensioning or epoxies
- Drill-in expansion anchors should be limited to the load (torque) controlled type. The working load limit should be limited to 65% of the 'first slip load' stated in the information provided by the supplier
- Deformation-controlled anchors, including self-drilling anchors and drop-in (setting) impact anchors, should not be used
- Where drill-in expansion or chemical anchors need to be used, the following proportions of anchors should be tested and proof loaded to the working load multiplied by a factor of 1.25
    - 10% of drill-in expansion anchors
    - all chemical anchors
- Drill-in expansion or chemical anchors should have a safety factor of 3 to 1 on their failure load. If any anchors fail, the remaining anchors on the same level should be tested
- Ties should not obstruct access along the working and access platforms
- Ties should interconnect with both the inner and outer scaffold standards (unless otherwise specified by an engineer) to increase the rigidity of the scaffold

Working Platforms

Working platforms, except suspended scaffolds should have duty classifications and dimensions.
Each scaffold should be designed to carry the required number of working platforms and to support its live loads.
The following are safe work practices or control measures for working platforms.

- Scaffold planks should:
    - have a slip-resistant surface
    - not be cracked or split
    - be of uniform thickness
    - be captive (i.e. cannot be kicked off) and fixed to prevent uplift or displacement during normal use
    - be positioned so that no single gap between planks exceeds 25 mm and the total gap between all planks does not exceed 50 mm
- Planks should not be lapped on straight runs of modular and tube and coupler scaffolding but may be lapped on hanging bracket scaffolds.

Overlapping planks. Lapped scaffold planks may sometimes be used to cover gaps around corners of scaffold bays. These planks generally may not need to be secured, provided the following are met:

- *timber is lapped over metal planks*
- *planks are 1.2 metres long or greater*

- *plank overlap, past the edge of the plank underneath, is 300 mm or greater*
- *standards prevents planks from moving sideways on the scaffold*

If using plywood sheets to cover gaps between scaffold bays the plywood sheets should be:

- **a minimum of 17 mm thick;**
- **only used to cover gaps less than 500 mm wide (unless approved by an engineer); and**
- **secured.**

- **Metal planks lapped on other metal planks should be secured**
- **All hop-up brackets should be provided with tie bars to stop brackets from spreading apart, causing planks to dislodge, unless otherwise specified by the scaffold designer**
- **The overhang of planks which are supported by putlogs should be greater than 150 mm but less than 250 mm – otherwise uplift might occur**
- **Avoid nailing or screwing laminated planks into position, unless otherwise specified by the manufacturer. Moisture penetrating the planks can cause damage and may not be easily detected**

Access and Egress

Workers must be provided with safe access to and egress from scaffold during the erection, use and dismantling of scaffolding. Common means of access and egress include:

- **temporary stairs or portable ladder access systems installed at the start of erection, progressed with the scaffold, and used by the scaffolder whenever possible**
- **permanently installed platforms or ramps**
- **personnel hoists (non-mechanical forms of egress, such as a ladder or stair tower should be provided in case of emergency)**
- **using the existing floor level of a building, provided such access is safe**

Note: Scaffolders should not climb standards externally. A scaffolder may climb an inside standard internally provided the fall distance is less than 3 metres (during housing construction work) or less than 2.0metres (during other construction work).

Ladders

The following are additional safe work practices which should be followed when working on ladders.

- **Ladders may be used where access to the working platform is needed by only a few persons, and where tools and equipment can be delivered separately to the working platform (for example, by materials hoist, crane or a rope and gin wheel)**
- **Ladders should be within a separate ladder access bay of the scaffold, wherever space permits**
- **If the access bay is part of the working platform, a trap door is to be provided. Strict controls are to be implemented to ensure the trap door remains closed while working from the platform**
- **Ladders should be set up on a firm, level surface and not used on scaffold bays to gain extra height**

Perimeter containment Screening

- **Perimeter containment screens must be made of mesh or of timber, plywood or metal sheeting. Perimeter containment screens made of mesh must comply with OHS Regulation**
- **Containment sheeting should be installed no higher than the upper most tie**
- **Where work is carried out close to pedestrian or vehicular access, scaffolds that are sheeted down to hoarding level can minimise both the risk to the public and the area lost to public access**

Where the height of the scaffold deck is at an angle greater than 75 ^{0} from base of fence to handrail at the highest point the scaffold shall be fully mesh guarded and covered in shade cloth to ensure no object may fall on a worker or member of the public below

Risk of a Fall at any Height

The following hazards may increase the risk of death or injury from a fall while erecting, altering or dismantling scaffolding.

- **poor environmental conditions, for example**
  - **strong winds that may cause workers to lose balance**
  - **rain causing a slippery work surface**

- glare emitted from work surfaces and/or poor lighting affecting visibility
- materials, equipment or protruding objects below, or in adjoining work area, for example
  - pallets of construction materials
  - vertical reinforcing steel
  - a rubbish skip
  - exposed starter bars
  - picket fences
- void areas not identified or protected, for example, ladder access voids
- incomplete scaffolds or loose scaffold components where work is being done, or is likely to be done
- inadequate training, instruction and supervision of scaffold workers

Risk of a fall of at least 2.0metres

Safe Erection of Scaffolding

The following summarises the prescribed work method for erecting scaffolding outlined in section 197 of the OHS Regulation

- After enough components of the scaffolding have been erected to support it, immediately install the following
  - a platform at least 450 mm wide along the full length of the section of scaffolding
  - edge protection across the space between the uprights forming the outer frame of the scaffolding at the level the scaffolding has reached
  - a means of access (for example, temporary stairs or a ladder) to the level the scaffolding has reached
- Before the next level of the scaffolding is erected, a platform must be installed below the level at a distance of not more than:
  - 3 metres if the erection of the scaffolding is housing construction work; or
  - 2.0 metres otherwise
- A section of the platform may be left open to allow the passing of planks or other scaffolding components between levels
- A platform does not need to be installed on the bottom level of the scaffolding
- A platform may be removed after work has started two levels above the level from which the platform is to be removed

Additional Safe Work Practices

The following additional safe work practices should be followed when erecting scaffold.

- Scaffold 'fittings' and other connections should be securely tightened. Where 'safety fittings' are used, they should be fitted in accordance with the scaffold plan
- All scaffold components should be installed as the scaffold is erected. For example, the installation of:
  - all bracing and ties; and
  - guy ropes or buttresses
- Consider using specifically designed loading platforms and/or back propping to prevent overloading the building floor or the scaffold
- Obtain certification from an engineer before erecting scaffold on awnings
- Limit the number of workers on a scaffold at any one time
- Develop a methodical work sequence if more than one worker will be on the scaffold at the one time; for example, allocate specific tasks to each scaffolder
- Work from a full deck of planks whenever possible
- Do not climb on guardrails to gain extra height
- Where the internal gap15 on scaffolding (includes hanging bracket scaffolding) is greater than 225 mm, put in place measures to control the risk of a fall. For example, install:
  - (a) edge protection which complies with the OHS Regulation, on the inside edge of the platform; and

- (b) additional scaffold planks to minimise the size of the internal gap.

Safe Dismantling of Scaffolding

The following summarises section 198 of the OHS Regulation which prescribes the safe method for dismantling scaffold.

- Edge protection and any means of access can be removed as the scaffolding is dismantled, provided it is removed at the last possible stage
- A platform of at least 450 mm wide, at the level the dismantling has reached, is in place, where practicable
- Ensure that when dismantling scaffold, the platform immediately below the level the worker is standing on, has a full set of planks across its width and is no lower than:
    - 3 metres (during housing construction work) or
    - 2.0 metres (during other construction work).
- A section of the scaffold may be left open (for example no platform in place) to allow the lowering of planks or other scaffolding components between levels

Scaffold Alteration

Control measures to minimise the risk of death or injury during scaffold alteration include ensuring:

- the scaffold designer is consulted before making any alterations;
- only a competent person makes scaffold alterations;
- scaffold alterations are in accordance with the scaffold plan;
- alterations do not compromise the structural integrity of the scaffold; and
- systems are in place (for example, regular inspections) to identify unauthorised interference with the scaffold.

Fall Arrest Systems

Generally, fall-arrest systems are not appropriate for erecting scaffolding because:

- workers are likely to hit a component of the scaffold before the fall is arrested;
- obtaining suitable anchorage points that can support a load of 15kN may be difficult;
- continuously hooking on and off the scaffold may be inconvenient; and
- fall arrest lines may become trip hazards.

Fall-arrest systems should only be used during the following scaffold activities.

- erecting or dismantling ‘ drop ’ or ‘ hung ’ scaffold where the scaffold is constructed from top to bottom, this allows for a clear fall zone, in the event of a fall;
- the fixing and removal of trolley tracks on suspension rigs;
- erecting or dismantling cantilevered needles and decking between the needles. Fall arrest systems could also be used during the erection of the first lift of scaffolding where workers are standing on the deck between the needles;
- the erection and dismantling of cantilevered scaffolds prior to or when removing the initial platform; and
- the attachment and removal of spurs projecting from the supporting structure.

Safe work procedure approved by:

Refer to Company Implementation Folder for signed documents

Worker sign-off

Refer to Worker’s induction file for signed documents