

SCAFFOLDING

LEARNING OUTCOME

Describe the requirements of the Work Health and Safety legislation and Code of Practice for scaffolding.

ASSESSMENT CRITERIA

- Describe the requirements under the Work Health and Safety legislation for scaffolding used within the workplace.
- List the hazards that are associated with the erection, use and dismantling of scaffolding.
- Describe the control measures that could be implemented to eliminate or minimise the risks associated with these hazards.

REFERENCES

Work Health and Safety Act 2011

- Part 2 - Health and Safety Duties
- Part 4 - Authorisations

Work Health and Safety Regulation 2011

- Part 4.5 (Licensing) High Risk Work
- Schedule 3 – High Risk Work
- Schedule 5 – Registration of plant and plant designs
- s225 – Scaffolding
- s306 P & s306Q – Erecting and dismantling Scaffolding

Australian Standards:

- A/NZSS 1576.1 – General Requirements
- AS/NZS 1576.2 – Couplers and Accessories
- AS 1576.3 – Pre-fabricated and tube and coupler scaffolding
- AS/NZS 1576.4 – Suspended scaffolding
- AS/NZS 4576 – Guidelines for scaffolding
- AS1577 – Scaffold Planks

ATTACHMENTS

[Scaffolding Code of Practice 2009](#)

[WHSQ Safety Alert – Stair module failures on scaffolding](#)

[WHSQ – Zip ties on scaffolding](#)

SCAFFOLDING

Under Schedule 19 of the *Work Health and Safety Regulation 2011* (WHS Regulation) scaffolding means a temporary structure specifically erected to support access or working platforms.

A 'temporary structure' refers to scaffolding that can be assembled and disassembled, for example, modular scaffolds, hanging bracket scaffolds, tube and coupler scaffolds and mobile scaffolds.

TYPES OF SCAFFOLDING

- *Independent Scaffold*
 - An independent scaffold consists of two or more rows of standards connected longitudinally and transversely.
- *Bird Cage Scaffold*
 - A birdcage scaffold is an independent scaffold that consists of more than two rows of standards in both directions and is connected by ledgers and transoms.
 - It is mainly used for work that is to be carried out on a single level, such as ceilings.
- *Tower Scaffold*
 - A tower scaffold is an independent scaffold consisting of four vertical members connected longitudinally and transversely.
- *Mobile Scaffold*
 - A mobile scaffold is an independent scaffold that is freestanding and mounted on castors.
- *Hung Scaffold*
 - A hung scaffold is an independent scaffold that hangs from another structure, but is not capable of being raised or lowered when in use.

LEGISLATION REQUIREMENTS

Specific legislative requirements for scaffold and scaffolding work		
High risk work licence	Scaffolding work is defined as high risk work and requires users to be appropriately licensed. Scaffolding work is divided into three levels (basic, intermediate and advanced) recognising the different levels of risk and the different techniques required for certain types of scaffolding.	WHS Regulation 2011, s81 and schedule 3 – High risk work licences and classes of high risk work
Safe work method statements	Safe work method statements are required for all high risk construction work, including any construction work that involves the risk of a person falling more than two metres.	WHS Regulation 2011, s291 and s299
Scaffold – written confirmation from a competent person	The person with management or control of a scaffold at a workplace must ensure that it is not used unless they receive written confirmation from a competent person that the construction of the scaffold has been completed.	WHS Regulation 2011, s225(2)
Scaffold – inspection by a competent person	The person with management or control of a scaffold at a workplace must ensure that the scaffold and its supporting structure are inspected by a competent person: • before it is used • before use is resumed after an incident that may reasonably be expected to affect the stability of the scaffold • before use is resumed after repairs • at least every 30 days. If an inspection indicates that the scaffold or the supporting structure creates a risk to health and safety then any necessary repairs, alterations and additions must be carried out. The scaffold and its supporting structure must be inspected by a competent person again before use is resumed.	WHS Regulation 2011, s225(3) and (4)
Scaffold – unauthorised access	The person with management or control of a scaffold at a workplace must prevent unauthorised access to any incomplete or unattended scaffold.	WHS Regulation 2011, s225(5)
Erecting scaffolding	A person conducting a business or undertaking (PCBU) must not erect or allow another person to erect scaffolding if there is a risk a person could fall three metres, for housing construction, or two metres for all other types of construction unless: • a control measure prevents a person from falling	WHS Regulation 2011, s306P

	• a fall arrest harness system is used, or • the PCBU otherwise complies with r306P(4). <i>Note 1: r306P(4) describes a specific process for scaffolding erection that minimises the risk of a fall.</i> <i>Note 2: A PCBU must still manage the risk of a fall at any height under Part 4.4 Falls.</i>	
Dismantling scaffolding	A PCBU must not dismantle or allow another person to dismantle scaffolding if there is a risk a person could fall three metres, for housing construction, or two metres for all other types of construction unless: • a control measure prevents a person from falling • a fall arrest harness system is used, or • the PCBU otherwise complies with s306Q(3)(b). <i>Note 1: s306Q(3)(b) describes a specific process for scaffolding erection that minimises the risk of a fall.</i> <i>Note 2: A PCBU must still manage the risk of a fall at any height under Part 4.4 Falls.</i>	WHS Regulation 2011, s306Q
Notifiable incidents	Dangerous incidents, such as the collapse or partial collapse of a structure (e.g. a scaffold) or the fall or release from a height of any plant, substance or thing (e.g. scaffold component), must be notified to Workplace Health and Safety Queensland.	WHS Act 2011, s35, s36, s37, s38 and s39

SCHEDULE 19 – DEFINITIONS:

Scaffolding means a temporary structure specifically erected to support access or working platforms.

Scaffolding Work means erecting, altering or dismantling a temporary structure that is or has been erected to support a platform and from which a person or object could fall more than 4m from the platform or the structure.

The Scaffolding Code of Practice 2009 deals with all types of scaffolding and gives guidance on its use. **Managing the Risks of Plant Code of Practice 2013** is also relevant and refers to the Australian Standards relating to scaffolds, i.e. *AS1576 Scaffolding General Requirements*, *AS1577 Scaffold Planks* and *AS/NZS 4576 Guidelines for Scaffolding*.

SCAFFOLD PLANKS

Scaffold planks are covered in Australian Standard *AS1577 Scaffold Planks*, and gives advice on safety requirements for the following types of planks:

- Solid timber planks
- Vertically laminated planks
- Metal scaffold planks

Each scaffold plank should be permanently and legibly marked with the following:

- Manufacturer's name or identification;
- The number of the Australian Standard i.e. AS1577;
- Working load limit (in kg);
- Allowable span (in metres) for random planks.
- For solid timber planks – branded on an edge with either “V” (visually graded) or “M” (machine graded).

Minimum width of a plank is 225 mm and minimum length is 1 metre.

BASIC RULES FOR USING MOBILE SCAFFOLD

When a tower-frame scaffold is mounted on castors for use as a mobile scaffold, the following control measures should be implemented:

- The height of a mobile scaffold, from the bottom of the scaffold to the working surface, should be no greater than three times the minimum base dimension, unless otherwise specified by the manufacturer, supplier or designer. Some mobile scaffolds (for example, aluminium) may not be stable at a 3 to 1 height ratio. AS 1576 Scaffolding specifies a side load test for verifying the stability of scaffolding. Documentation verifying that the mobile scaffold complies with this test is required.
- Where adjustable castors are used, the slope of the surface should not exceed 5 degrees.
- Use a secure internal ladder with a protected opening (for example, a hinged trap door) for access and egress to and from the scaffold.
- Select the appropriate size and capacity castors to support the total mass of the dead and live loads of the scaffold.
- Use castors that have the working load limit clearly marked.
- Castors fitted to standards should be locked before erection continues.
- Castors with adjustable legs should be used and adjusted to keep the platform level when the supporting structure is at different heights.
- Incorporate plan bracing at the base of mobile scaffolds to provide greater stability.
- Before moving mobile scaffolds check that:
 - there are no power lines or other overhead obstructions
 - the ground is firm and level
 - no person is on the scaffold
 - no equipment and material can be dislodged from the platform
 - the supporting surface is free of obstructions (a small obstruction may cause a mobile scaffold to overturn); and
 - electrical equipment and leads cannot be tangled.
- Brakes on castors are to be locked at all times unless moving the scaffold.
- Never move the scaffold in windy conditions.
- Push or pull the mobile scaffold from the base – never use powered vehicles to move the scaffold.
- Never access the scaffold until all its castors are locked to prevent movement.
- Do not cover the scaffold with containment sheeting such as shade cloth, unless it has been specifically designed for the purpose and it is only used in an enclosed, wind-protected environment.
- If lifting a mobile scaffold by crane, sling the scaffold at its lowest point to prevent dislodgment of scaffold components. However, a crane should not be used to lift aluminium mobile scaffolds because the scaffold components may fail.

Working platforms on scaffolds are generally rated as light, medium or heavy duty. The duty rating for a particular scaffold should be established from the supplier's information.

The load limits for these duty ratings are as follows:

- **Light duty** – up to 225 kg per full-width platform per bay. This is usually suitable for plastering, painting, electrical work, and other light tasks.
- **Medium duty** – up to 450 kg per full-width platform per bay. This is usually suitable for general trades work.
- **Heavy duty** – up to 675 kg per full-width platform per bay. This is what is generally needed for bricklaying, concreting, demolition work and most other work tasks involving heavy loads or high impact forces.

These safe load limits include the weight of people (which is taken to be a nominal 80 kg per person), plus the weight of any materials, tools and debris on the platform.

Therefore, a properly constructed scaffold with a light duty working platform can safely support one worker and 145 kg of tools and material, or two workers and 65 kg of tools and materials.

PRINCIPLES OF DESIGN

The design of the scaffold should take into account:

- the strength, stability and rigidity of the supporting structure;
- the intended use and application of the scaffold;
- the safety of persons engaged in the erection, alteration and dismantling of the scaffold;
- the safety of persons using the scaffold; and
- the safety of persons in the vicinity of the scaffold.

Basis of design should consider the following:

- Foundations (i.e. ground conditions, environmental loads, dead loads, live loads)
- Supporting structure (i.e. soleboards and baseplates)
- Stability
- Tying
- Working platforms
- Fall arresting platforms
- Edge protection
- Access and egress, and
- Perimeter containment screening

HAZARDS ASSOCIATED WITH SCAFFOLDING

A number of hazards exist that have the potential to cause death or injury when working with scaffolding. These include:

- work near powerlines
- mobile plant and traffic
- mixing and matching scaffold components
- falls from heights
- falling objects
- scaffold collapse
- manual tasks

MOBILE PLANT AND TRAFFIC

Mobile plant and vehicular traffic are hazards which can potentially affect worker safety and the safe use and structural integrity of scaffolding.

Outlined below are control measures that can be used to prevent or minimise exposure to the risk of death or injury from moving plant and traffic.

- Re-route motor vehicles and mobile plant away from the location of the scaffold, for example, by using traffic controllers to redirect traffic.
- Use barricades, signs, posts, buffer rails, guards, or concrete or timber kerbs to prevent mobile plant and traffic from coming into contact with scaffolding.
- Ensure scaffolding does not have any unnecessary protrusions, such as over-length **transoms**, **putlogs**, tie tubes or over-height **standards**.

INSPECTION AND MAINTENANCE PROCEDURES

Procedures must be developed for the inspection and maintenance of the scaffold to ensure it remains in a safe condition. The inspection of scaffolding on site is particularly important when the scaffold is in place for a prolonged period of time.

Frequency of inspection

The frequency of inspections may vary depending on weather and site conditions, the type and size of the scaffold and the risks associated with scaffold collapse.

The person with management or control of a scaffold at a workplace must ensure that the scaffold and its supporting structure are inspected by a competent person:

- before the scaffold is used; and
- before use of the scaffold is resumed after an incident occurs that may reasonably be expected to affect the stability of the scaffold; and
- before use of the scaffold is resumed after repairs; and
- at least every 30 days.

Discuss appropriate intervals for inspection with the supplier when the scaffold is first installed.

The person inspecting the scaffold must be capable of determining areas that have been incorrectly altered and have experience in identifying faults in the scaffolding.

Inspection records should be kept on site and include the location, comments, date and time of inspections, relevant design or specification reference and the person who conducted the inspection. Further information can be found in the *AS/NZS 4576 Guidelines for scaffolding*.

Hand over inspections

The person responsible for the erection of the scaffold should provide the PCBU or principal contractor with a handover certificate which is kept on site until the scaffold has been dismantled.

Version	Date	Author
1	30/06/2018	WHSQ