SECTOR BRIEFING

TRANSPORT HERITAGE NSW

Working at Heights

Your organisation has a legal obligation to provide and maintain a safe environment for your volunteers, customers, and visitors. You can read more on this in the previous Sector Brief – Safety Responsibility and Accountability.

Under the Duty of Care requirements, you should have in place processes to identify, control, and monitor risk. See Sector Brief – Managing Safety Risk. A specific risk for workers is working at heights. This sector briefing covers identifying and controlling working at height hazards.

IMPORTANT

Falls are a major cause of death and serious injury in Australian workplaces. Fall hazards are found in many workplaces where work is carried out at height. For example, stacking shelves in warehouses and retail outlets, working on a roof, unloading a large truck or accessing silos. Falls can also occur at ground level into holes. For example, trenches or service pits. In 2022, 19 persons were killed from falling from a height.

Most serious and fatal falls are from roofs, ladders or scaffolds – and from a height of less than 4 metres. Even falling a short distance can be devastating.

1) Identify the Hazards

The first step in the risk management process is to identify all fall hazards in the workplace. This involves finding objects and situations which could potentially cause harm to people. Hazards generally arise from the following aspects of work and their interaction:

- Physical work environment.
- Equipment, materials and substances used.
- Work tasks and how they are performed.
- Work design and management.

IMPORTANT

You must identify all locations and work tasks that are reasonably likely to cause injury due to a fall. This includes access to and exit from the areas where work is to be carried out.

The following situations are particularly hazardous when working at heights:

- Working near:
  - Unprotected open edges of floors or roofs.
  - Unguarded holes, penetrations and voids.
  - Unguarded excavations, trenches, shafts, and/or lift wells.
- Working from:
  - Unstable structures (for example, incomplete scaffolding).

- Unprotected formwork decks.
- Unsecured ladders.
- Working on, or near fragile, brittle surfaces (for example, cement sheet roofs, fibreglass roofs, skylight).

Hazards must be assessed by considering the likelihood of a fall occurring and the severity of any injury that may result. This can include examining the:

- Height at which the work is to be undertaken.
- Surface underneath the work area.
- Potential for slipping on work surfaces.
- Slope of surfaces.
- Stability of the structures on which work will be undertaken.
- Stability of the ground that work structures are resting on.
- Protection present to protect anyone or anything from falling from open edges where there is a change of level.

2) Controlling the hazards

You must implement appropriate safe systems of work in accordance with the hierarchy of controls to eliminate or minimise the risks to health and safety.

Eliminate the hazard

Working on the ground is the most effective method of protecting workers from fall hazards. This might include:

- Prefabrication at ground level.
- Reducing shelving heights to allow access to items from ground level.
- Using tools with extendable handles such as paint rollers.

Substitute with a safer surface

Working from a level surface that is structurally capable of supporting workers, material and any other loads is an effective way of managing the risks of falls. This might include:

- Temporary work platforms such as properly erected scaffolds or elevated work platforms.
- Solidly constructed stairs with fixed handrails.
- Even and accessible work surfaces and slopes.
- Safe entry and exit points.

Isolate the hazard

You can use physical barriers to protect workers from falls. This might include:

- Perimeter guard railings, generally consisting of a top-rail at least 900mm above the working surface, a mid-rail and a toe board.
- Ensuring that openings such as holes in floors are fenced off with secure barriers or covered over with safety mesh or timber sheeting.

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Engineering controls

Engineering controls use physical means to help to minimise the risk of falls and might include:

- 'Work positioning' systems that position and safely support a worker at the location where the task is to be performed (for example travel restraint systems, industrial rope access systems and drainers' hoists).
- Fall arrest system, to prevent or reduce the severity of injury if a fall does occur, including catch platforms, industrial safety nets, a lifeline, harness and rope grabs.
- Portable ladders.

As a rule, fall protection must be provided to all workers when the risk of a fall from height cannot be eliminated and it is likely that an injury could occur as a result of the fall. However, if the type of work makes it difficult for a worker to be fully aware of the location of the platform edge fall protection should be provided regardless of height. For example, welding, oxy acetylene cutting and other work involving restricted vision would require fall protection.

Administrative controls

Administrative controls should only be used to support higher level control measures. They require a high level of training and supervision to be effective. Administrative controls might include:

- Warning signs.
- 'No-go zones' (only allowing trained people in certain areas).
- Organising and sequencing work to not interfere with other jobs.
- Safe work instructions and procedures.

Personal protective equipment

Individual fall arrest systems are designed to arrest a falling person safely and their correct use relies on many factors, including the availability of properly engineered anchorage points.

Fall arrest systems and travel restraint systems should only be used when other means of providing fall protection, such as scaffolds, guardrails and elevating work platforms, have been considered and are not practicable.

Before using an individual fall arrest system or travel restraint system you MUST be trained in its use.

TIP

Allocating one person within your organisation to being responsible for the management of First Aid will likely have a better outcome than if it is a shared responsibility.

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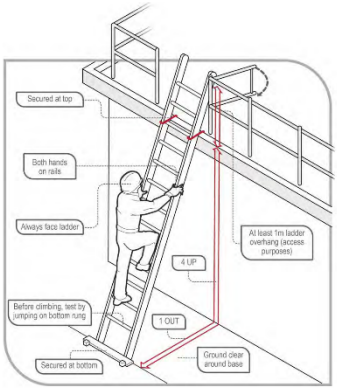
3) Use of Portable Ladders

Extension or single ladders should only be used as a means of access to or exit from a work area or for short duration light work that can be carried out safely from the ladder.



Ladders should be selected to suit the work to be carried out. In doing this, you should consider the duration of the work, the physical surroundings where the work is to be carried out and the prevailing weather conditions. Depending on the specific task and how it is carried out, step platforms should be used as they provide an improved level of fall protection.

Before setting up a ladder, it should be inspected for visible damage or faults, for example broken rungs, stiles and footings.

When using a ladder:

- Always maintain 'three points of contact' as follows:
  - When going up or down a ladder, always have two feet and one hand, or one foot and two hands, on the ladder.
  - When working from a ladder, have two feet and one other point of contact with the ladder, such as a hand or thighs leaning against the ladder.
- Use a tool belt or side pouch so that materials or tools are not carried in the hands while climbing the ladder.
- Ensure only light duty work is carried out while on the ladder, where tools can be operated safely with one hand.
- Ensure that no-one works underneath the ladder.
- Do not allow anyone else on the ladder at the same time.
- Do not straddle the ladder.
- Wear slip-resistant footwear.

TIP

Complete and document an annual inspection of all your working at height equipment, including portable ladders, to ensure they are safe to use.

4) Use of Fixed ladders

Fixed ladders are those that are permanently installed, often providing access to cranes, signals or roofs. These ladders are typically safer than portable ladders. Ideally, fixed ladders should be installed in accordance with AS 1657–2018: Fixed platforms, walkways, stairways and ladders – Design, construction and installation. The Australia Standard requires the installation and use of ladder cages and/or fall protection for many fixed ladders. Consider using "ladder lockout covers" on fixed ladders that are accessible to the public, as they can prevent access by unauthorised persons.

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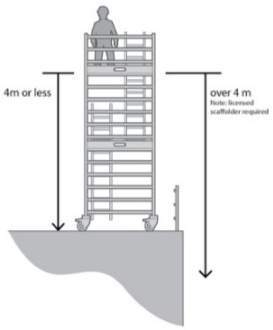
5) Use of Scaffolds



A scaffold is a temporary structure erected to support access or working platforms. Scaffolds are commonly used in so workers have a safe, stable work platform when work cannot be done at ground level. Scaffolds can be very effective protection in preventing falls. Where work is carried out from a scaffold, workers must be provided with information, training and instruction on the nature of the scaffolding work, the risks associated with scaffolding and the control measures implemented to reduce that risk. This should be done with a specific risk assessment or Safe Work Method Statement.

A licensed (High Risk Work Licence, Basic scaffolding (SB), Intermediate scaffolding (SI) or Advanced scaffolding (SA)) scaffolder is required for the erection, alteration or dismantling of a tower or mobile scaffold where there is a risk that a person or object could fall more than 4 metres from the platform or the structure. Often tower and mobile scaffolds will not require a licensed scaffolder to erect or dismantle them as there is no risk of a fall greater than 4 metres. However, the work should still be carried out by a competent person.

6) Use of Fall Arrest Systems

Individual fall arrest systems consist of some or all of the following components:

- Anchorages including rail system.
- Lifelines, lanyards, shock absorbers and inertia reels.
- Rope and wire grabs.
- Harnesses,
- Snap hooks and karabiners (double or triple action to prevent rollout).
- Rescue equipment.

Individual fall arrest systems rely on workers wearing and using them correctly. Therefore, workers who will use such a system must be trained in its safe use. Fall arrest systems must be inspected by competent persons.

7) Use of Elevating work platforms (EWPs)

EWPs include boom-type EWPs and scissor lifts. If using an EWP, you must identify the hazards associated with the use of the EWP and implement control measures to eliminate or minimise those. This should be done with a specific risk assessment or Safe Work Method Statement.

Relevant risk control measures when using EWPs should include:

- Training and instructing workers in the safe operating procedures for the specific brand and type of EWP, as well as safe work procedures to avoid crushing and electrical hazards.
- Training and instructing workers in the safe use of fall arrest equipment and emergency rescue procedures.
- Ensuring the EWP is only used as a working platform and not as a means of entering/exiting a work area.
- Placement of the EWP on a solid, level surface, unless it is designed for use on rough terrain.

- Checking the surface area to make sure there are no penetrations or obstructions that could cause uncontrolled movement or overturning of the EWP.

8) Protecting those below the work

Dropped items pose a risk to those who are underneath the work being completed. This might include other workers or members of the public. The risk of dropped items can typically be controlled by setting-up an exclusion zone around the work. Workers within the exclusion zone should wear hard hats to protect them from falling objects.

Heights is, and will continue to be, a risk for all heritage groups, by applying the risk mitigation strategies detailed above you can demonstratively show you have managed the risk and prevent harm to volunteers, customers, and visitors.

If you have more questions or queries, contact:

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