



Rethinking safety through
INCLUSION
+
WELLBEING

HEALTH + SAFETY

PRIMARY STANDARD

30/03/2026

PREVENTION OF FALLS AND DROPPED OBJECTS

PURPOSE AND SCOPE

The Primary Standard details the FSR controls and minimum requirements to eliminate or minimise risks of falls and dropped objects at Laing O'Rourke workplaces.

Section 1 – 'Requirements' in this document is Mandatory and must be achieved across all Laing O'Rourke Workplaces. Where alternative controls are implemented, these must be approved through the FSR/HSEMS Requirement Dispensation process.

Section 2 – 'How to Comply' in this document provides information and guidance on how to comply with the requirements. Laing O'Rourke Workplaces are required to follow this guidance or achieve an equivalent or higher level of safety/outcome, documenting alternatives in the Project Risk Assessment and/or WHS Management Plan.

Definitions are detailed in [Appendix 1 - Definitions](#)

REQUIREMENTS

FSR Identify potential for falls and dropped objects during Safety in Design, constructability assessments and work planning, eliminating or engineering out the risk where possible.

- Falls and dropped objects must be managed following the falls prevention hierarchy of control below:

Level 1: Undertake the work on the ground or on a solid construction to eliminate the risk of falls from height. Where this is not practicable, the risk of falls must be minimised.

Level 2: Undertake the work using a passive fall prevention device. Where this is not practicable.

Level 3: Undertake the work using a work positioning system. Where this is not practicable.

Level 4: Undertake the work using a fall injury prevention system. Where this is not practicable.

Level 5: Undertake the work from ladders, or implement administrative controls

FSR Designs for voids and penetrations in concrete slabs must consider cast-in mesh/reinforcement to prevent fall.

FSR Edge protection and handrail system designs must be approved by the Temporary Works Coordinator.

FSR Non-proprietary penetration covers must have a temporary works design and be inspected by the Temporary Works Coordinator.

- A Safe Work Method Statement (SWMS) is required for any construction works where there is a risk of a person falling more than 2 meters. (Refer to System Requirement Safe Work Method Statement)
- For rail, when planning works over or near the rail protection zone, dropped object protection must be determined based on the Network Operators' requirements to prevent objects falling onto rail traffic, members of public, obstructing the rail track(s) or entering the Danger Zone.



EXECUTING WORK

- FSR** Edge protection and handrail systems are installed as per the design by competent persons and inspected at required intervals by the Temporary Works Supervisor.
- The removal of permanent guardrails and grid mesh must be managed using the 'Grid mesh, Handrail, Flooring Removal Permit', and supervised.
- FSR** Physically prevent objects from falling or people from being exposed to a fall by:
- Use of fully encapsulated work areas (e.g. scaffold sheeting, mesh barriers).
 - Installing toe boards, netting, tool lanyards, and debris containment systems.
 - Designing catch platforms or hard barriers below elevated work zones.
 - Securing stored materials with restraining systems.
- FSR** Where full encapsulation is not in place, establish exclusion zones beneath and adjacent to work at height, using linked physical barriers, clear signage, access approval procedures, and contact details for the responsible person.
- When determining the size of an exclusion zone that needs to be erected, consideration must be given to the potential for deflection of dropped items off other structures or plant and equipment etc.
 - The exclusion zone must remain in place until the risk of items or objects falling or being dropped from height does no longer exist.
- FSR** If access is required to areas beneath elevated work zones (e.g. under viaducts), stop overhead work or manage dropped object risks using encapsulation systems or exclusion zone.
- FSR** Deep excavations left unattended must be secured with fencing or barriers at least 1.8m high, or covers to prevent unauthorised access, along with Deep Excavation signage.
- FSR** EWP operators must assess ground conditions before operating to confirm stability and suitability for load-bearing.
- FSR** A Permit to Load must be in place before an EWP is set up for operation.
- Refer to the [Temporary Works Classification and Control Measures](#).
- FSR** When operating boom-type EWPs, wear a full body harness with a suitable lanyard securely attached to the approved anchorage point.
- FSR** EWP operators (including scissor lifts) must hold the nationally recognised competency for the equipment being used.
- FSR** A work at height permit must be in place where fall arrest or restraint systems are the primary fall prevention control.
- Personnel using fall arrest or restraint systems must not work alone.
- FSR** Personnel using fall arrest or restraint systems must be trained, competent, and hold industry-recognised qualifications.
- Supervisors and engineers who plan and directly supervise work at height, must complete work at heights training where other qualifications do not contain the equivalent components.
- FSR** Verify that all fall protection equipment is certified, tagged, and fit for use before work begins.
- No persons, including sub-contractors will be allowed to select, use or inspect personal fall protective equipment unless they have successfully completed training covering safe use, selection, care, inspection and maintenance and storage of personal fall protective equipment



- FSR** Cover all penetrations or gaps greater than 50 mm x 50 mm before work begins, where there is a risk of objects falling onto people below.
- FSR** For any penetration that may need to support the weight of personnel or plant, install engineered covers or rated fall-protection measures approved by the Temporary Works Coordinator.
- FSR** Secure all penetration covers, clearly mark them with "DANGER Hole Below" or "WARNING Penetration Below," and display the Safe Working Load (SWL).
- FSR** Safe access and egress to working at height areas, are in place, considering emergency response requirements.
- Work areas (i.e. scaffold, formwork / falsework systems, bridge decks etc.) with a top working platform exceeding 8 meters in height and extending more than 60 lineal meters in length shall have at least two points of access and egress. One of these access points must accommodate emergency stretcher access.
- FSR** An emergency plan is in place, equipment available, and the team are trained in the response process.
- FSR** Obtain a Crane Workbox Permit before commencing any workbox operations.
- FSR** Delineation controls (e.g. flagging), in combination with spotters, may only be used to manage exclusion zones for continuously moving OHLE operations in the rail environment.
- Risk associated with weather conditions such as high winds, rain, lightning, and extreme temperatures need to be considered before undertaking and during working at heights activities.
 - Where work is undertaken over operational railways protection must be in place to prevent objects falling onto rail traffic, members of public or entering or obstructing the Danger Zone.

FACILITIES, INSTALLATIONS, PLANT AND EQUIPMENT

- FSR** Verify that secondary anti-crush guarding and/or systems are installed and functional on telescopic EWP's and scissor lifts.
- FSR** Inspect and verify that fall protection anchor points are certified, fit for use, and rated to 15kN for single-person and 21kN for two-person use.



HOW TO COMPLY

This section provides information and guidance on how to comply with 'Requirements' of this document. Laing O'Rourke Workplaces are required to follow this guidance or achieve an equivalent or higher level of safety/outcome, documenting alternatives in the Project Risk Assessment and/or WHS Management Plan.

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1.0 PROCEDURE

1.1 RISK MANAGEMENT

A risk assessment must be carried out to determine the level of risk to workers and the type(s) of control method/s or protection to be provided. This risk assessment will be conducted in accordance with System Requirement Risk Assessment and SiD.

Risk Assessments must consider the risk management guidance below, seeking opportunities to eliminate/reduce the risks associated with falls and dropped objects following the falls prevention hierarchy of control, including:

Type of control	Example
Level 1	Undertake the work on the ground or on a solid construction to eliminate the risk of falls from height. Where this is not practicable, the risk of falls must be minimised.
Level 2	Undertake the work using a passive fall prevention device. Where this is not practicable.
Level 3	Undertake the work using a work positioning system. Where this is not practicable.
Level 4	Undertake the work using a fall injury prevention system. Where this is not practicable.
Level 5	Undertake the work from ladders, or implement administrative controls

1.2 ENGINEERED SAFETY

Engineered Safety in Practice (examples):

- Design in protections and consider the opportunity to build in temporary systems to the permanent works.
- Design in opportunities to construct off/near site, or on ground to maximise pre-assembly and reduce requirement to work at height.
- Temporary works coordinator to review adequacy of work at heights equipment and fall prevention systems to verify the design of the systems withstand the designed forces.
- The risks associated with working at heights including falls and dropped objects are identified, assessed and controlled in accordance with the falls from heights hierarchy of controls:

1.3 TRAINING AND COMPETENCY

ROLE	Competency Requirements
Worker required to wear fall arrest/restraint harness as the primary source	The nationally recognised unit RIIWH5204E – Work safely at heights or equivalent.
Supervisors of workers required to wear fall arrest/restraint harness as the primary source	The nationally recognised unit RIIWH5204E – Work safely at heights or equivalent.
Scissor Lift Under 11 Meters	The nationally recognised unit RIIHAN301E Operate Elevated Work Platform
Boom Lift Under 11 Meters	The nationally recognised unit RIIHAN301E Operate Elevated Work Platform
Boom Lift Over 11 Meters	High Risk Work (HRW) Licence – WP class to operate a boom lift with a boom length exceeding 11 m.



2.0 CONTROL MEASURES

2.1 TEMPORARY WORKS

Temporary Works associated with the controls details below must be managed in accordance with LOR Temporary Works Procedure and associated Guidelines. Access to these documents is via iGMS - [Temporary works](#)

2.2 WORK PLATFORMS

All work platforms must achieve the edge protection requirements details in s2.3- 'Edge Protection' below.

2.2.1 SCAFFOLDS

Additional details relating to Scaffold are detailed in the Primary Standard for Scaffold on the [LOR HSEMS](#)

2.2.2 ELEVATED WORK PLATFORMS (BOOM AND SCISSOR)

Requirements for the use of EWP is detailed in the Elevated Work Platform (EWP) Supplementary Material and Guidance Document on the [LOR HSEMS](#)

2.2.3 FORMWORK AND FALSEDECK

Additional details relating to Scaffold are detailed in the Primary Standard for Formwork on the [LOR HSEMS](#)

2.2.4 LOADING PLATFORMS

Loading platforms must have a designated 22kn anchor point to allow persons opening gates to securely clip on.

2.3 EDGE PROTECTION

Edge protection systems are classed as temporary works and must follow temporary works requirements detailed in line with the Temporary Works Classification and Control Measures

Permanents works designs should incorporate edge protection solutions for use during construction as part of Engineered Safety.

Where possible, edge protection systems should be constructed and fitted on Ground Level and lifted into place to avoid constructing in elevated locations.

Edge protection systems are a permanent or temporary system that has been installed in line with the relevant manufacturer requirements and / or approved designs.

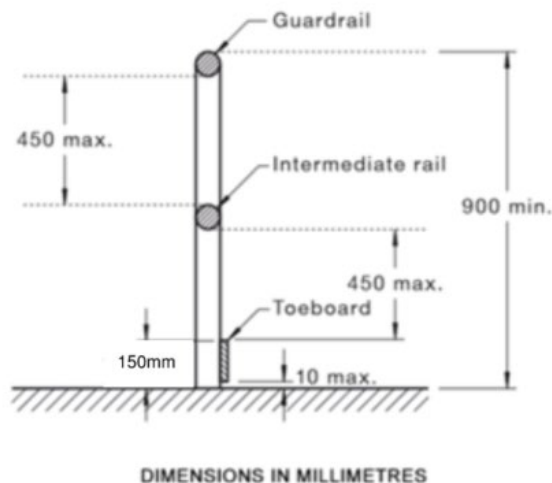
Edge protection systems can be constructed from:

- Scaffold tube.
- Prefabricated scaffold system components.
- Purpose designed and manufactured edge protection systems constructed from metal / steel.
- Timber.

Where timber is used for the construction of edge protection systems, it must be done so in compliance to an approved temporary works design.

Edge protection systems must:

- Have a handrail installed at a height measured vertically from the walkway working platform surface that is not less than 900mm or greater than 1100mm.
- Have one or more intermediate rails installed horizontally to the handrail. Gaps must not exceed 450mm. Where a toe board is installed, the measurement shall be taken from the top
- Where toe boards are installed, it must be fixed and rigid. Gaps between the toe board and walkway or working platform surface must not exceed 10mm.
- Toe boards shall be minimum 150mm in height.
- Where toe boards are installed the gap between the lowest rail and the walkway or working platform surface must not exceed 560mm.
- Edge protection systems must be inspected in compliance to any OEM and / or temporary works requirements.
- **Note:** Platform / portable ladders must not be used next to edge protection systems that consist of a top handrail height between 900mm and 1100mm



2.3.1 EDGE PROTECTION SYSTEMS FITTED TO EXCAVATION RETENTION SYSTEMS

Where edge protection systems as part of ground retention systems are utilised, the requirements associated the heights of top and mid-rails set out under Edge Protection apply.

Alternatively, where the top of the retention system is protruding from the excavation in such a way that the measurement from the top of the system to ground level on the outside of the excavation is measured at not less than 900mm, compliance to the above requirements will be met.





2.3.2 MOBILE PLANT AND EQUIPMENT EDGE PROTECTIONS

Where the upper decks or platforms of mobile plant and equipment is required to be accessed to perform maintenance / servicing or repairs suitably designed edge protection systems must be in place. The edge protection systems shall:

- Be approved by the OEM or have relevant engineering certification detailing compatibility with the specific type of equipment.
- A minimum 1m in height.
- Be fitted with a mid-rail.
- Be fitted with toe boards not less than 100mm in height.
- Have gaps no less than 450mm between top rail and mid rail, and the mid-rail toe board.
- Be constructed from steel / metal.



2.3.3 TRUCK AND TRAILER EDGE PROTECTIONS

Where access is required onto the tray of a truck or trailer, the equipment must be fitted with an edge protection system that prevents any worker accessing the equipment being exposed to a falls risk.

Webbing Type Edge Protection Systems

Where a webbing type edge protection system (i.e. SpanSet WebRail) is being utilised, the system shall:

- Consist of two (2) rails, a top and mid-rail. The height of the top and mid-rails shall not exceed 1100mm and 550mm respectively.
- Have support posts, or stanchions, in place along the length of the truck / trailer tray at distances not greater than 2000mm, with heights not exceeding 1100mm.
- Be connected to headboard and end support posts via eyebolts or eyelets and tensioned appropriately.
- Be visibility maintained in good working order and have no evidence of damage or wear to any parts of the system, including stanchions fixed to the truck / trailer.
- Have evidence of, and be installed and maintained in compliance to, the associated proprietary design and that design be made available upon request.



Example of a good webbing type edge protection system



Headboard connection



Example of a poor webbing type edge protection system



End post connection

OTHER EDGE PROTECTION SYSTEMS

Other systems may be utilised for the purpose of providing edge protection against falls risks associated to workers accessing the back of trucks. Any proposed system must be accompanied by, and maintained in compliance with, appropriate levels of proprietary design information.



Edge protection system: BTS Flat Bed Trailer Edge Protection System (TEPS)

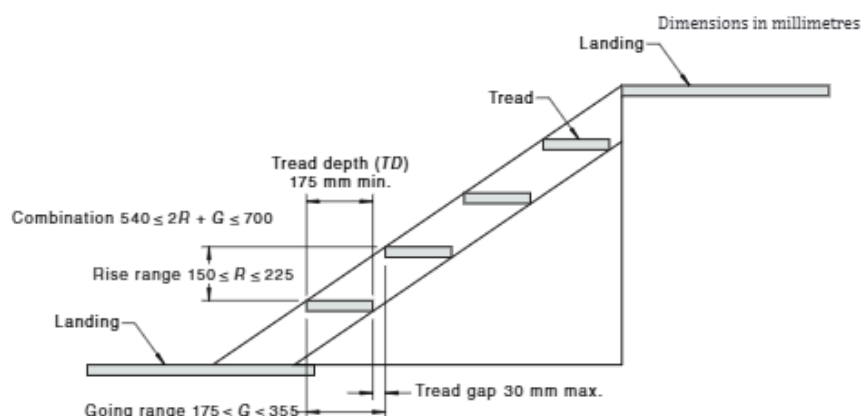


Edge protection system: SpacePac Load-Safe

2.4 ACCESS / EGRESS

2.4.1 TEMPORARY STAIRS

- Where temporary stairways are used for scaffold or construction area access shall comply with the following:
- Stairways shall be in straight flights.
- Tread widths shall be no less than 500mm and tread depths no less than 175mm.
- Rises must be between 150mm and 225mm.
- All rises in a flight must be dimensional (+/- 5mm for prefabricated systems and 10mm tolerances for systems constructed on site).
- Rises must not exceed 18 per flight.
- Landings must be installed between flights.
- Landings must be in place at any change of direction.
- Vertical clearances for stairs and landings must not be less than 1850mm.
- The step between the ground and the first rise should not exceed 300mm.
- Where multiple steps need to be built to access the first rise, these should be consistent in height to that of the rises.
- The going must be between 175mm and 355mm, be not greater than the tread depth and have a maximum 30mm between the rear edge of a tread and the nose of the tread above.
- Stairways must be fixed or secured in compliance with proprietary or temporary works design requirements.



2.4.2 STRETCHER STAIRS

- Where temporary stairways are in place for the purpose of stretcher access as part of planned emergency response protocols, they must comply with the details in section Temporary Stairs, plus the following:
- Stairway angle of slope in reference to the horizontal (i.e. stairs vs ground or landings) must not exceed 45 degrees.
- The tread must have a minimum effective width of 1000mm, unobstructed by stair stringers extending into the tread depth.
- The landing must have a minimum length of 1200mm in the direction of travel and a width that is at least equal to the width of the stairway.
- The top surface of the external handrail or guardrail must be at least 1400mm above the landing or the top of each stair tread.

2.5 DROPPED OBJECTS PROTECTION

2.5.1 PERIMETER SCREEN / INFILL PANELS

Perimeter screening must be installed where there is a risk of items being released from heights that could result in an injury to personnel or damage to assets. Examples include but are not limited to:

- The perimeter of scaffolding systems where the first landing or working platform is >1.8m, including stairs used for access and egress.
- The perimeter of formwork or falsework systems that are not encapsulated by the material used for construction of that system.
- As part of edge protection systems that are not part of scaffold or formwork / falsework systems i.e. edges of bridge girders, edges of roofs etc. that is intended to stop workers being exposed to falls from height risks.

The structure supporting the perimeter screening must be designed to withstand any loads associated to the installation of the perimeter screening, including environmental loads because of adverse or extreme weather. It is the responsibility of the relevant engineer to consult with the TWC on any temporary works requirements associated to perimeter screening.

Perimeter screening may be aviary mesh, or other proprietary item such as brick guard etc., however aperture sizes must not exceed 25mm. Every effort must be made to ensure there are not gaps between sections of perimeter screening and / or perimeter screening and toe boards / working platforms that present a risk of objects falling from height. Further, perimeter screening must not be altered, moved, cut etc. without approval from TWS.

The condition of perimeter screening must be inspected in conjunction with the inspection requirements of

2.5.2 WORK OVER OPERATIONAL ROADS OR RAIL ENVIRONMENTS

- Erection of structural elements etc. must not be done over live road or rail environments.
- Protection is always in place to prevent objects from falling onto traffic or public / pedestrians below.
- Temporary fencing and / or edge protection systems are installed with a top rail of at least 1800mm, measured vertically from the finished surface level, and must be installed with perimeter screening.

2.5.3 TETHERS AND LANYARDS

- Where perimeter screening is not in place and the risk of tools and / or equipment being dropped or released from height that could result serious injury or damage to assets (i.e. work from an MEWP) then controls must be in place to mitigate the risk.
- Lanyards and tethers shall be fixed to equipment such as hand and power tools or other similar items. Lanyards must be rated appropriately to the weight of the equipment; they must be designed in conjunction with relevant Australian Standards and must be in good condition prior to each use.
- The use of tethers and lanyards does not remove the requirement for the erection of exclusion zones.





Note: Laing O'Rourke does not endorse any specific brands, makes or models. The below images are for visual representation of market accessible options.

2.5.4 EXCLUSION ZONES

Where an area is not completely encapsulated (i.e. gaps between pre-cast girders or planks etc.) and there is a risk of items or equipment being released from height (i.e. parapet stitch pours, work from an MEWP etc.), then the area directly below the working at heights activities must be defined as an exclusion zone, preventing access while the hazard is present.

When determining the size of an exclusion zone that needs to be erected, consideration must be given to the potential for deflection of dropped items off other structures or plant and equipment etc.

The exclusion zone must remain in place until such point that the risk of items or objects falling or being dropped from height does no longer exist.

2.6 PENETRATION COVERS

2.6.1 SAFE DESIGN OF PENETRATION COVERS

The following describe applications of penetration/void protection for specific circumstances. Where these circumstances exist, the respective requirements must be followed.

Penetrations in Horizontal Elements must be protected as per following diagrams:

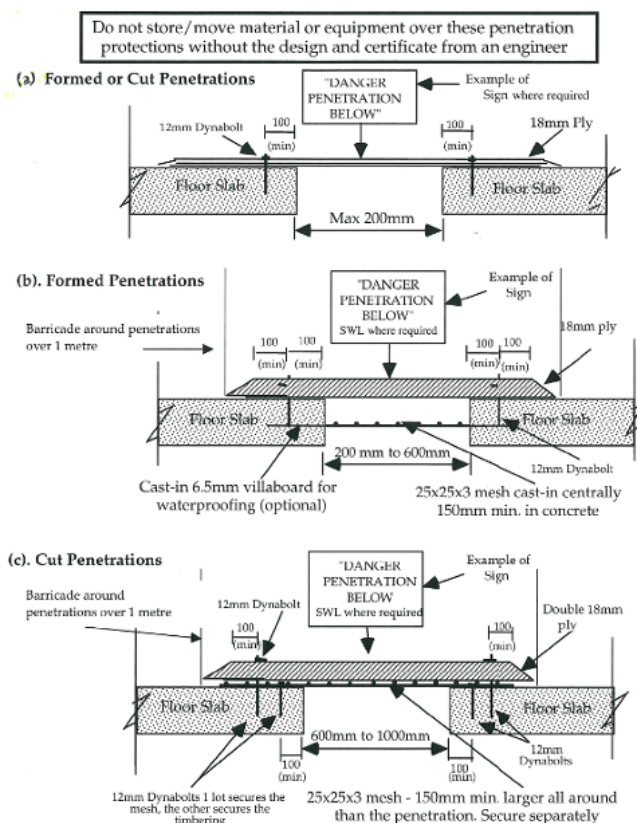


Figure 1

Openings against walls – Cantilevered must be protected as per following diagrams:

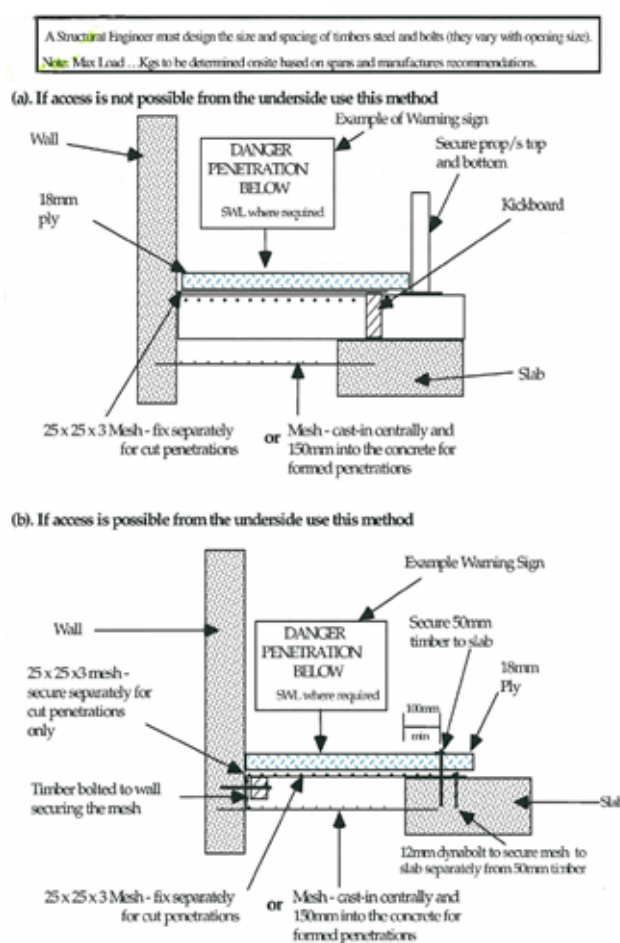


Figure 2

2.6.2 PROPRIETARY COVERS

Where proprietary cover is used, it must:

- Be rated for the traffic that will be operated on / over it;
- Achieve compliance with relevant Australian Standards;
- Be installed, inspected and maintained in accordance with the manufacturers requirements/specifications; and
- Be verified as appropriate through Temporary Works Permit to Load process.



2.6.3 NON-PROPRIETRY COVERS

- Non-proprietary penetration covers must have a temporary works design and be inspected by the Temporary Works Coordinator.
- For any penetration that may need to support the weight of personnel or plant, install engineered covers or rated fall-protection measures approved by Temporary Works Coordinator.

2.6.4 PENETRATION COVER SIGNAGE

- Penetration Covers must have signage installed, identifying of the risk. As a minimum, signage must:
 - Have a minimum size of 300 mm x 300 mm
 - be clearly identifiable as a hole cover, marked with "DANGER – HOLE BELOW" or "WARNING - HOLE BELOW" in black on yellow background
 - indicate a Safe Working Load and relevant instructions, e.g. NOT TRAFFICABLE BY PLANT
- All covers must be painted yellow and must not be a trip hazard

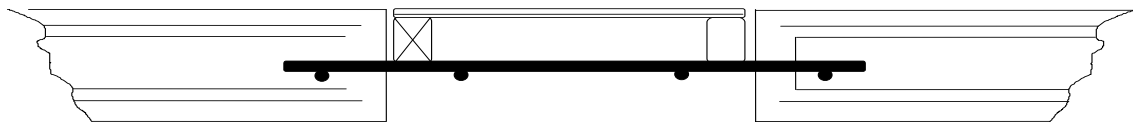


Figure 3 19mm ply on timber battens flush with hole



Figure 4 Adequate signage



Large penetrations which are required to remain open must have:

- A proprietary system or scaffold double guardrail with: 1m high top rail, toe-boards and brick guards securely fixed around all open sides of the penetration
- toe-boards with a minimum height of 150 mm (225mm recommended) and no gap between boards or rails may exceed 470 mm

A means of fall protection e.g. netting and debris netting placed across the penetration at every floor level if mesh and edge debris guarding cannot be incorporated



Figure 5 Example of protection to large penetration

2.6.5 PENETRATIONS INTENDED TO BE TRAFFICABLE BY PLANT

Penetrations where plant (for example, forklifts, scissor lifts and MEWPS) movement is required must have steel plates placed across the penetration that:

- Have sufficient strength to support 1.5 times the maximum load imposed
- Have a bearing surface of no less than 200mm on all sides of the penetration and must have lugs welded to the underside at the dimension of the penetration to secure it firmly in place
- Are securely fastened
- Has been checked and approved by the Temporary Works Coordinator
- Are clearly marked with its Safe Load Bearing capacity

Newly built manholes or access chambers must have temporary covers:

- That will not be dislodged by traffic until the permanent covers are installed
- With strength to support 1.5 times the maximum load imposed



Figure 6 Example of temporary manhole covers



Figure 7 Example of temporary cover awaiting fixing to slab

2.6.6 VERTICAL OPENINGS (FOR EXAMPLE LIFT SHAFTS AND ACCESS TO RISERS)

Vertical Openings must:

- Be fitted with permanent doors as early as possible. Where this is not possible, lockable temporary doors must be installed as soon as possible covering the full height & width of the opening and must be secured and marked.
- Where scaffolding is used as a short-term solution prior to installation of secured doors, it must be protected by the following measures:



- 4 guardrails (minimum) to a height of 2m including a minimum 150mm toe board (recommended 225mm) must be solidly fixed to the opening entrance
- Brick guards fitted to the guardrails to prevent the insertion of heads or limbs into the penetration or shaft
- Securing of protection system to walls either side of the doorway/shaft which are not easily removable
- Have signage stating "Warning KEEP OUT - Open Shaft!" with a minimum size of 300mm x 300mm securely fixed to the guardrails

NOTE: For large risers, ducts or shafts a specific permit system for entry must be implemented to control access.

Penetrations used for lifting operations must be:

- Protected by guardrails to a minimum height of 1m, with intermediate rails at spacing not exceeding 450mm, toe boards of minimum 150mm, (225mm recommended) - this barrier must be fully meshed with brick guards or similar

Main service risers must:

- Have a permanent metal deck or GRP floor where possible
- Prior to permanent services being installed have a temporary cover:
 - Made of plywood with 100mm x 50mm timbers fitted tightly over the upstand
 - With 'Penetration Below' warning painted on top
 - That is engineered to take the load of operatives and tools



Figure 8 Metal Riser Flooring with 65mm perimeter upstand



Figure 9 From Underside: Metal Flooring with holes for future services. Note ply protection.

2.7 PERSONAL PROTECTIVE EQUIPMENT AND FALL EQUIPMENT (PFPE)

Once it is assessed that there are no safer suitable alternatives, PFPE can be used. PFPE must first comply with AS/NZS 1891.1. In situations where a worker is required to use PFPE, a Working at Height Permit must be in place.

PFPE must only be used when the person is able to attach their harness to:

- A certified safety line, ideally above head height, or
- A certified work box via an energy absorbing lanyard with slack removed

2.7.1 WORKING AT HEIGHT PERMIT

A Work at Heights Permit is required where a fall arrest or restraint system is the primary fall protection control measure. Refer to PS Permit to Work.

This permit is **NOT** required for work activities where alternative fall prevention systems are in place, like fixed edge protection, secure fencing or working platform, provided:

- The system is appropriately designed and installed to eliminate the risk of free fall.



- The work is conducted in accordance with an approved Safe Work Method Statement (SWMS).
- Workers hold the required competencies and training to operate plant safely.
- An appropriate pre-work brief has been conducted and signed by workers.

Note: A Working at Heights Permit is not required where a fall-arrest harness is worn as part of an access ladder systems into an excavation/trench/shaft as part of designed access system fall prevention and/or emergency response equipment requirement (e.g. davit arm systems).

2.8 FALL PROTECTION ANCHOR POINTS

2.8.1 ANCHOR POINTS

When using FPE, it must be attached to a certified anchor point.

Anchor points must comply with Australian and New Zealand Standard 5532 and be designed to withstand forces equal to their rated capacity in all directions that could be applied during a fall arrest.

As a minimum, anchor points must be able to adequately withstand the following loads:

- 15kN for one person
- 21kN for two people
- 12kN for limited free fall

For construction purposes, anchor points must meet the following requirements:

- Be clearly identifiable.
- Be positioned to enhance safety:
 - Where practicable, anchor points should prevent workers from accessing areas where falls could occur (fall restraint).
 - If fall restraint is not feasible, the anchor point must minimize fall distance and reduce the risk of a pendulum effect.
- Include a permanent, weatherproof plate near the anchorage, made of metal or other durable material, displaying:
 - The Safe Working Load (SWL) of the anchor point in compliance with Australian Standard 1891.4.
 - The installer's name and installation date.
 - The certifier's name and certification date.
 - The type of activity the anchorage supports (e.g., restraint or arrest).
 - The ultimate strength rating.
 - The maximum number of workers allowed to connect to the point simultaneously (not exceeding two).



- Come with installation and test certificates.

NOTE: All drilled-in anchorages must be proof-tested, and unmarked anchor points must not be used.

Anchor points must be installed by a worker trained and assessed as competent as a Height Safety Equipment Inspector. Certification must be performed by either:

- A worker trained and assessed as competent as a Height Safety Equipment Inspector, or
- A certified Structural Engineer.



2.8.2 ATTACHING TO A STRUCTURE

If an anchor point cannot be directly attached to a structure, a fall prevention system may be temporarily secured to the structure, provided the following conditions are met:

- The design drawings for the structure must be available.
- A certified Structural Engineer or TWC must inspect the structure to ensure compliance with the design.
- The Structural Engineer or TWC must clearly identify and mark the approved attachment points by affixing a permanent, weatherproof plate (e.g., metal or durable material) near the anchorage. The plate must display:
 - The Safe Working Load (SWL) of each attachment point, in accordance with Australian Standard 1891.4.
 - The installer's name and the installation date.
 - The certifier's name and the certification date.
 - The type of activity the anchorage supports (e.g., restraint or arrest).
 - The ultimate strength rating.
 - The maximum number of workers permitted to connect simultaneously (not exceeding two).
- A Structural Engineer or TWC must provide a written report detailing their review, structural inspection, and the approved attachment point locations.
- The relevant Project Leader must provide written approval for the use of the attachment points

2.8.3 HARNESSES

- Fall arrest equipment must consist of full-body harnesses equipped with suspension trauma straps. The harness must:
 - Be properly fitted to the worker using it; and
 - Be removed from service if defects are discovered or if it's deemed to be unsafe in any way.
- If rope length adjustment is required for fall prevention, a lockable cam device (or similar mechanism) must be used. To prevent the rope grab (or similar device) from detaching from the rope, a knot must be tied at the rope's end.
- All carabiners must:
 - Feature double-locking gates and clearly display the manufacturer's name and load capacity, and
 - Not be used in a way that allows snap hooks to side-load.

2.8.4 LANYARDS

When using a fall arrestor system in a non-vertical position, the potential for the 'pendulum effect' must always be assessed. Lanyards used for fall arrest must include an energy absorber and:

- Be suitable for the activity and no longer than 1.8m, including the energy absorber.
- Limit the free fall distance to a maximum of 2m and be attached as per the manufacturer's instructions.
- Be from the same manufacturer as the harness.
- Have self-locking snap hooks to prevent accidental rollout.
- Not be connected together to extend their length, nor should they:
 - Be passed around an anchor point, or
 - Be hooked back onto themselves.



2.8.5 STATIC LINES

Only workers with a High-Risk Work License as either Riggers or Scaffolders are authorised to install or remove static line systems. Static lines must be securely installed to support the engineered load in the event of a fall and must:

- Be installed with proper access to the clip-on point, considering:
 - Allowance for line "sag" during use,
 - A turnbuckle with the appropriate Working Load Limit (WLL) at one end for tensioning,
 - Protection from sharp corners or edges.
- Care should be taken to avoid over-tensioning the line.
- A tag must be attached, containing:
 - The erector's name,
 - The erection company's name, installation and inspection dates,
 - Details of the line's usage,
 - A statement specifying how many workers can use the static line at once,
 - Maintenance and servicing requirements,
 - The date (dd/mm/yyyy) the system is to be decommissioned if not recertified.

Non-proprietary static line systems must comply with temporary works design requirements and be managed in accordance with the temporary works process.

2.8.6 INDUSTRIAL ROPES ACCESS SYSTEMS

Only workers who are members of either IRATA or ARAA are permitted to use industrial rope access systems, and they must not work independently or alone. The supervisor must possess the competencies of a Level 3 Rope Technician.

2.8.7 SAFETY NETS AND ARREST/CATCH DECKS

Nets are an option where, for example, roof work leaves the potential for falls from edges or temporarily unprotected openings.

- They should be used in conjunction with an edge protection system where possible.
- Nets can also be used to lessen the severity of a fall with some proprietary formwork systems.
- An alternative to certified netting systems is, in situations where a deck is at a height that would require persons to stand at heights of 2 metres or more when installing bearers and joists for formwork, a continuous arrest deck ("false" deck or catch platform) is to be used.
- An arrest deck is, a full deck the same area as the floor being formed. The arrest deck must be provided both inside and between formwork frames and can typically consist of form ply, scaffold planks or modular platform sections

2.8.8 TRAINING

Before using PFPE, the following training requirements must be met:

- The type of control measures used to prevent falls
- Procedures for reporting fall hazards and incidents
- No persons, including sub-contractors will be allowed to select, use or inspect PFPE unless they have successfully completed training covering safe use, selection, care, inspection and maintenance and storage of PFPE equipment
- Safe Work at Heights Course (jurisdiction specific as required) shall be completed by riggers, scaffolders & form workers, and supervisors and engineers who plan and directly supervise these



occupations, where other qualifications do not contain the equivalent components of the safe work at heights training for the jurisdiction

- The correct use of tools and equipment used in the work (for example, using a tool belt instead of carrying tools)
- The Safe Work Method Statement for the work task must be briefed to the workforce and must describe the areas and conditions under which PFPE can or cannot be used
- Training must be provided in the use of related rescue equipment/method and for recovery treatment

2.8.9 SELECTION AND USE OF PFPE

The following general conditions must be met:

- All PFPE used onsite including those used/owned by individual contractors must comply with current standards

Further, regarding specific PFPE components, the following must be met:

- Fall arrest blocks (inertia reels) must only be permitted for vertical use above the user's head - horizontal use could lead to serious injury if rigged or used incorrectly
- For restraint use, preference must be given to using reinforced steel lines (such as those found in inertia reels) over arrest lanyards where possible as the latter are more susceptible to damage on concrete or sharp edges
- For arrest use, full body harnesses with leg loops must be used - arrest must be last resort

Before any work is carried out using PFPE:

- Emergency procedures, including rescue procedures, must be in place for the fall arrest system
- Training and instruction in relation to the emergency procedures must be provided for those doing the work and involved in emergency response

The rescue procedure must always involve immediate contact of emergency services upon incident occurrence. Refer to the Emergency Response Plan for further information and guidance on emergency planning and response.

Any equipment designated to be used in the case of rescue must also be kept as close to the work area as possible and be available at all times.

Persons suspended from PFPE will be subject to suspension trauma as a result of the femoral arteries being restricted which could have serious effects on the body. As such, rescue procedures must include steps for dealing with suspension trauma. Of particular note, such steps must include:

- Providing immediate medical attention to the suspended person no matter how long they have been suspended
- Seating the rescued suspended person with their knees (legs) pulled up to their chest and kept in this position for 20 – 30 minutes or until the emergency services arrive



2.9 LADDERS

2.9.1 PORTABLE LADDERS

Only industrial platform or podium portable ladders that have minimum load rating of 120kgs are permitted for use.

Portable ladders must be inspected before each use. Where defects are found the ladder must not be used and immediately removed from service.

A back bar must be in place for all platform and podium ladders that are 2m or greater in height.

Extension ladders and A-frame ladders are not permitted for use.



2.9.2 VERTICAL AND ANGLED ACCESS LADDERS

Where vertical or angled ladders are used for access i.e. into pits or excavations etc. the following conditions shall be met.

- The width between the stiles must be between 450mm and 750mm.
- The slope angle must not be between 45 and 60 degrees i.e. the 'unsafe' zone.
- Rung surfaces must be slip resistant.
- Rungs must be secured to the stiles and not have the ability to rotate.
- It must be constructed of a material or be provided with a coating that prevents corrosion.
- Ladders must be secured in compliance with proprietary design and / or temporary works requirements.



2.9.3 LADDER CAGES

Where a falls risk of greater than 6m is present, a ladder cage must be in place on all vertical or sloped ladders that conforms with the following:

- The inside of the cage must be free from projections.
- The cage must not have openings that would not allow a 150mm sphere to pass through it.
- The cage must extend a minimum of 1000mm past the landing or be equal to the top guardrail of any edge protection system.
- The bottom of the cage must be between 2000mm and 2200mm from the base of the ladder.
- The rear half of the cage must be of a semi-circle type shape.
- Connections must be either welded or fastened in compliance to any proprietary or temporary works design requirements.



2.10 PORTABLE WORK PLATFORMS

Portable work platforms are forms of mobile access equipment that are commonly used to access the back of trucks. Portable work platforms shall:

- Have fixed access stairs.
- Be a proprietary item that meets relevant design criteria.
- Be affixed with the SWL.
- Provide edge protection on three (3) sides if the potential fall height is less than 2 metres, or on all four sides if the fall height exceeds 2 metres.
- Feature edge protection that complies with the requirements set out in section 4.3 of this procedure.
- Be equipped with locking devices to prevent unintended movement.



When setting up a portable work platform:

- An inspection must be undertaken checking for any visible faults or defects. All faulty platforms must be immediately removed from service.
- The platform must be adjusted to ensure it is the same height as the plant or equipment intended to be accessed.
- The platform's wheel locking mechanisms must be secured.
- If the platform is intended to be moved by mobile plant i.e. by crane or telehandler, it must be done so in compliance with the OEM requirements.
- Workforce shall be briefed on the use of a portable work platform, in compliance with any OEM requirements.

2.11 FALLS TO DEPTH (HOLES, PITS AND EXCAVATIONS)

Where there is a risk of a person falling down a hole, pit, or excavation, such as an open trench or services pit etc., then physical protection must be in place using either:

- A cover strong enough to withstand any expected loads i.e. steel plate, or;
- Interlinked barricades or fencing that encapsulates the entire hole, pit or excavation from all sides e.g. water filled barriers or temporary fencing



The barricade or fencing must be affixed with signage warning of the hazard and if the type of barrier used consists of guardrail (top and mid-rail) the guardrails must be suitable for the relevant load cases.

Note: it's the engineer's responsibility to consult the TWC on temporary works requirements for protection of pits and excavations.

Where items such as jersey barriers or water-filled barriers are utilised to prevent people from being exposed to falls risks associated to excavations or trenches, they must be placed outside of the zone of influence of the excavation with a minimum offset to the edge of the excavation of 1 metre, as per Temporary Works approved design requirements.

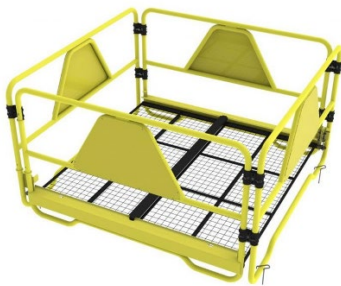
Where barriers are required to be placed within 1 metre of an excavation edge, this must only be done with geotechnical information and approval stating that it is safe to do so. Consultation should occur with the TWC when placing barriers adjacent to excavations for the purpose of edge protection.

Note: The zone of influence refers to the volume of soil around an excavation that can be affected by external loads. The zone of influence is usually measured as 45 degrees out from the bottom of the excavation.

2.12 FALLS TO DEPTH (PILING EXCAVATION)

Where there is a risk of a person falling or plant falling into a piling excavation, then physical protection must be in place that includes:

- Interlinked barricades or fencing that encapsulates the entire hole, from all sides e.g. crowd barriers: and
- Has a physical cover over each pile hole e.g. pier hole protector, penetration cover etc.





3.0 INSPECTIONS

Inspection of Fall Prevention Equipment must be done in accordance with the following table.

Item	Frequency	By whom
PPE including harnesses and lanyards etc.	Before and after each use 6 monthly	The user Height safety equipment inspector
Fall arrest devices	6 monthly	Height safety equipment inspector
Ropes and slings	6 monthly	Height safety equipment inspector
Anchorage – drilled in or attached to timber frames	12 monthly	Height safety equipment inspector
Anchorage – other types	Up to 5 yearly	Height safety equipment inspector
Fall arrest equipment – full service	12 monthly unless specified otherwise by the OEM	Height safety equipment inspector
Lifelines – Steel rope or rail	5 yearly if recommended by the OEM 12 monthly if not specified	Height safety equipment inspector
Lifelines – fibre rope or webbing	6 monthly	Height safety equipment inspector
Any items stressed as a result of a fall	Inspection before further use	Height safety equipment inspector

All harnesses and other fall prevention equipment must be maintained on a register that includes the following information at a minimum:

- Item description.
- Serial number.
- Location.
- Date of last service.

4.0 INCIDENT AND EMERGENCY PROCEDURES

When planning for Working at Heights Emergency Response risks, consideration must be given to:

- Type and location of equipment required for a rescue and how it will be accessed in the event of an emergency.
- Location & accessibility of first aid equipment, qualified first aiders, medical centres, etc.
- Competencies/ capabilities of workers who will undertake the emergency response.
- Communication mechanisms to be adopted.



- Location and accessibility of the working at heights emergency response risks, that is:
 - Type of access to perform emergency response i.e. davit systems, Ladders, MEWPs, stairs etc.
 - The location or placement of the access i.e. will it remain unobstructed and is it suitable for the foreseeable emergency response risks.

Work must not proceed until:

- Workers involved in the activity are:
 - briefed in and understand the emergency response action plan.
 - aware who will respond to an emergency and the roles each person plays in any emergency response action plan.
- All necessary equipment is readily available and in proximity to where the work at heights task is to be performed. **Note:** Emergency response equipment may be able to service 2 or more work areas if it is deemed, via risk assessment, that it is near each work area.
- The emergency response action plan has been tested and deemed effective for the task.

The emergency response action plan must be readily available for the duration of the work and must remain as close to the work location as possible.

In the event of an emergency occurring on site, where relevant and when directed, all working at height operations in the immediate or affected area shall cease and/or be made safe as soon as is possible.

5.0 REGULATIONS, CODES AND STANDARDS

Key legislation, codes and standards relating to this primary standard are outlined the Laing O'Rourke Health and Safety Legal Register.

6.0 PLANS, FORMS AND TEMPLATES

For relevant plans, forms and templates see the Laing O'Rourke HSEMS at <https://lorhsems.com/>.

7.0 APPENDICES

7.1 APPENDIX 1 - DEFINITIONS

Term	Definition
EWP	Elevated Work Platform
OHLE	Overhead Line Equipment
Solid Construction	Refers to an area that has: • A surface that is structurally capable of supporting all persons and things placed on it, and o Barriers around its perimeter and any openings to prevent a fall, and • An even and readily negotiable surface and gradient, and A safe means of entry and exit.
Fall Prevention Device	Fall prevention device includes: • A secure fence • Edge protection • Working platforms – including fixed and portable platforms, scaffolds and elevating work platforms • Covers