HASLIN

Working at Heights

SEQ-PR-009

Document Revision Control

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13	Procedure rename & 6.3 Temporary Structures (False Work)	Jeremy Wallis	01/03/2021
14	Inspection and Verification of edge protections, gantries and hoarding- section 6.1 HRW riggers tickets included in section 6.3	Jeremy Wallis	21/04/2021
14b	Update to Temporary Structures 6.3	Jeremy Wallis	19/2/22
15	Scaffold and Temporary Works with SafeWork Scaffold Guideline	Clare English	17/5/22
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18	Updated to include scaffold registration	Tim Kelly	30/06/2023
19	Updated due to AS/NZS updates	Kate Pollock	11/07/2024
20	Updated Section6.6 to include - The design registration number for prefabricated scaffolding must be kept readily accessible at all times, for example near the scaffold.	John Wetherell	06/11/2024

Document Approval			
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1. Scope

The Scope of this procedure is to ensure that any work, where there is a risk of personnel or equipment falling, is carried out safely so that persons performing the work do not endanger themselves or other personnel below who may be exposed to the hazards of falling objects. It details the requirements associated with working at heights, including on high plant structures, open holes, edges, scaffolding, and platforms, temporary structures, false work, work on roofs, elevated work platforms and ladders and all hazards controlled in accordance with the hierarchy of controls. It also covers the requirements associated with the safe use, purchasing, storage, transport, inspection and maintenance of related equipment. Additional requirements are subject to client contractual agreements.

2. Application

This procedure is applicable to all Haslin employees and sub-contractors. Where contract conditions require Haslin employees to follow a different procedure or different forms, Haslin employees must seek approval from the Safety Manager prior to using such procedure or forms.

3. Definitions

Scaffold:	A temporary construction which consists of a framework and an elevated working platform for supporting people and materials
Formwork	Formwork means the surface used to contain and shape wet concrete until it is self-supporting. This includes the forms on or within which the concrete is poured and the frames and bracing which provide stability. Although commonly referred to as part of the formwork assembly, the joists, bearers, bracing, foundations and footings are technically referred to as falsework.
Fall	Risks to health and safety associated with a fall by a person from one level to another that is reasonably likely to cause injury to the person or any other person.
Fall Arrest System	Fall arrest systems are designed to stop (or "arrest") a fall that has already begun and are intended to safely stop a worker falling from an uncontrolled distance and reduce the impact of the fall.
Permanent Fall Arrest System:	An engineer-designed permanent system attached to suitable anchor points that can withstand a minimum breaking force of 15kN. For example, steel cable static lines, steel cable ladder climbing systems, rigid rail ladder climbing systems all constructed to conform to AS1891.3.
Fixed Work Platform:	A permanent or temporary (such as scaffolding) platform with handrails or barriers which provide positive protection from falling.
Mobile Work Platform:	Includes mobile platforms, scissor lifts, cherry pickers, crane work baskets, swing stage scaffolding.
Fall Restraint System:	Devices to physically prevent a person from reaching a position at which there is a risk of a fall. FALL RESTRAINT DEVICES MUST NOT BE USED TO ARREST FALLS.

Suspension Intolerance	Suspension intolerance can occur with a fall arrest system when a person has an arrested fall and is suspended in an upright, vertical position. The capacity of the lower legs to store large amounts of blood reduces the return of blood to the heart, slowing the heart rate, which can cause the person to faint. This may lead to renal failure and eventually death, depending on a person's susceptibility. This condition may be worsened by heat and dehydration.

4. References

NSW

- NSW Scaffolding Industry Safety Standard
- WHS Regulations 2017 Division 10 Falling objects
- NSW Work Cover – Safe Working at Height Guide – 2006
- Code of Practice - Managing the Risk of fall at Workplaces 2019
- NSW Government Code of Practice – Managing the Risk of Falls at Workplaces 2019

QLD

- WHSQ Code of Practice - Managing the Risk of fall at Workplaces 2021
- WHSQ Code of Practice – Scaffolding 2021
- WHS Regulation 2011

General

- Safe Work Australia Model Code of Practice - Managing the risk of falls at workplaces 2018
- AS1576 – Scaffolding - Parts 1 to 6
- AS/NZS 4994—Temporary Edge Protection
- AS/NZS 4994.3 Temporary edge protection – Installation & dismantling for edges other than roof edges
- AS 3610.1-2018 Formwork for Concrete
- AS1657 – Fixed platforms, walkways, stairways and ladders
- AS1891 – Industrial Fall Arrest Systems and Devices – Parts 1 to 4
- AS1892 – Portable Ladders – Parts 1, 2 and 5
- AS2550 – Cranes, hoists and winches, Safe use – Parts 1 to 20
- AS/NZS 4576: Guidelines for scaffolding
- Code of Practice – Safety Line Systems
- Code of Practice - Work Near Overhead Power Lines
- Code of Practice – Safe Work on Roofs – Commercial and industrial buildings
- General Guide for Scaffolds and Scaffolding Work
- Electrical Safety Code of Practice – Working near overhead & underground Electrical lines 2020

5. Legal requirements

Haslin has a duty to eliminate risks to health and safety so far as is reasonably practicable if it is not reasonably practicable to eliminate risks to health and safety, minimise those risks so far as is reasonably practicable. This is achieved by identifying hazards, assessing the risks, implementing specific control measures using the hierarchy of controls and monitoring the effectiveness of the controls and revise if necessary. There is also a duty to not exceed an exposure standard (which may occur with Suspension intolerance), to establish and test emergency rescue procedures and provide workers with suitable and adequate information, training and instruction in relation to the management of falls and rescue procedures.

6. Procedure

The following procedure outlines the requirements for working at heights

6.1. Risk Management

While planning or performing working at height, it is a requirement to identify reasonably foreseeable hazards that could give rise to risks to health and safety. In the first instance this requires eliminating risks to health and safety so far as is reasonably practicable.

If it is not reasonably practicable to eliminate risks to health and safety then risk control measures to minimise those risks must be implemented so far as is reasonably practicable, by doing 1 or more of the following:

a) substituting (wholly or partly) the hazard giving rise to the risk with something that gives rise to a lesser risk,
b) isolating the hazard from any person exposed to it,
c) implementing engineering controls.

If a risk then remains, it must be minimised, so far as is reasonably practicable, by implementing administrative controls. If a risk still remains, it must be minimised, so far as is reasonably practicable, by ensuring the provision and use of suitable personal protective equipment. A combination of these controls may be used to minimise risks if a single control is not sufficient for the purpose.

These controls should be continually monitored to review the effectiveness of the controls and they should be revised if necessary.

The initial risk assessment must be performed by a competent person/s in accordance with SEQ-PR-001 Risk Management Procedure.

6.2. Elimination

Wherever possible, work should be planned to avoid working at heights. This may be achieved by assembling items at ground level before lifting into position or installing permanent access, handrails or guards prior to work beginning.

6.3. Elevated Work Platforms

Prior to using an Elevated Work Platform (EWP), it is a requirement to assess the hazards involved with its use. Daily inspections and regular maintenance must be carried out, including a major safety inspection after ten years of use and every five years thereafter. A logbook must be supplied and maintained on each elevating work platform and this is to be completed and signed by the operator each day. Operator manuals need to be available on site. Elevating work platforms that are not in safe operating condition must be immediately removed from service until repaired and must be tagged as "Out of Service" or "Do not Use". EWPs must be registered as plant in accordance with the relevant state-based Regulations and SafeWork Authorities requirements and should only be operated by competent persons in accordance with SEQ-PR-069 Training and competency Procedure.

When operating an EWP, the operator must ensure that:

- When working near overhead electrical wires, SEQ-FM-065 Overhead Powerlines Permit is used,
- A safety harness complying with AS1891.1 shall be worn by all personnel on the platform of a boom type elevating work platform and be secured to a suitable anchor point provided for the purpose,
- The rated capacity of the EWP is never exceeded,
- The manufacturer's maximum designated gradient for travel is never exceeded,
- Workers in the EWP shall stand on the floor and not on the handrails or items such as ladders or scaffolding either placed on the platform floor or the handrails,
- When the work is to be carried out by a person alone on an elevating work platform, arrangements shall be made for communication and rescue in the event of failure of the elevating mechanism or disabling injury or sickness of the operator,
- An exclusion zone is placed beneath the EWP,
- The effects of wind are taken into consideration,
- The EWP is used in a well-ventilated area,

6.4. Ladders, walkways and platforms

Walkways and platforms must have suitable secure bases and fixed ladders are to be installed in accordance with AS/NZS 1657 Fixed platforms, walkways, stairways and ladders — Design, construction and installation. Guidance on the selection, safe use and care of portable ladders is set out in AS/NZS 1892 Portable ladders series. The manufacturer's recommendations on safe use should also be followed.

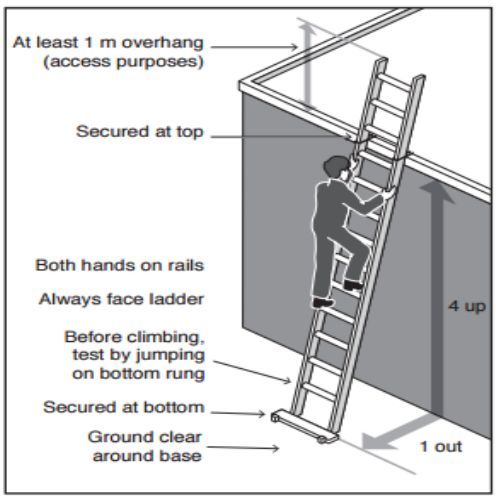
Ladders are a last resort when selecting work platforms. Where possible, platform ladders or work platforms should be used. Extension or single ladders should only be used as a means of access to or egress from a work area ensuring that the ladder is placed at a slope of 4:1, in the fully opened position and secured at the top and bottom. Step ladders and rung ladders are not to be used as working platforms and should have a load rating of at least 120 kg and be manufactured for industrial use. Metal ladders must not be used for electrical work.

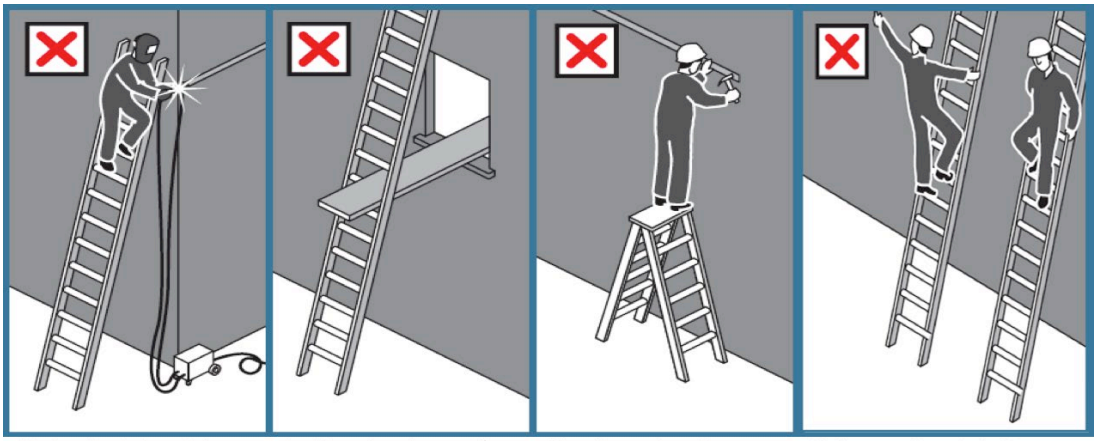
Ladders should be inspected for faults, such as broken rungs, stiles and footing before use. Damaged ladders are to be removed from service. Ladders should be set up on firm, stable and level ground and of the correct height for the task to avoid reaching or stretching. Ladders should not be placed so that the weight of the ladder and any person using the ladder is supported by the rungs.

Ladders should not be used in access areas or doorways, on scaffolding or an elevating work platform to get extra height, next to power lines unless the worker is trained and authorised or in very wet or windy conditions. When using ladders, it is not safe to work over other people or allow anyone else to be on the ladder at the same time.

Ladders should be regularly inspected by a competent person in accordance with the manufacturer's recommendations. Ladders with any of the following faults must be replaced or repaired:

- Fibreglass stiles cracked, chipped or severely faded with fibres exposed
- Timber stiles warped, splintered, cracked or bruised
- Metal stiles twisted, bent, kinked, crushed or with cracked welds or damaged feet
- Rungs, steps, treads or top plates that are missing, worn, damaged or loose
- Tie rods missing, broken or loose
- Ropes, braces, or brackets that are missing, broken or worn
- Timber members that are covered with opaque paint or other treatment that could disguise faults in the timber
- Missing, loose, bent or worn fasteners, i.e. rivets, bolts and pins
- Worn or damaged feet, including non-slip material.





6.5. Edge Protection/Temporary Edge Protection

Edge protection must be used to provide effective fall prevention:

- at the edges of roofs
- at the edges of mezzanine floors, walkways, stairways, ramps and landings
- on formwork systems
- on top of plant and structures where access is required
- around openings in floor and roof structures
- at the edges of shafts, pits and other excavations.

Guard rails should incorporate a top rail 900mm to 1100 mm above the working surface and a mid-rail and a toe board. Before using a guard rail system, you should check that it will be adequate for the potential loads. The required load resistance will depend on the momentum of a falling person. For example, the momentum of a person falling from a pitched roof will increase as the pitch (or angle) of the roof increases.
The type of temporary edge protection system shall be selected to ensure that its installation and intended work at height can be carried out safely.

Temporary guards and handrails require a temporary works design in accordance with SEQ-PR-040 Temporary Works Design Procedure. The potential for falling objects must be identified, assessed and controlled utilising the Hierarchy of controls. Controls must be implemented before any work takes place and remain in place until work is completed.

Temporary guards and handrails, such as those installed on formwork, must be periodically inspected to determine if there has been any alterations or damage, or following an event that may have affected the integrity of the edge protection system since installation.
When working at heights it is appropriate to have signs indicating that work is taking place overhead and the area of work should be barricaded off if there is any risk of falling materials or equipment.

6.6. Scaffolding

All scaffolding should be designed in accordance with SEQ-PR-040 Temporary Works Design Procedure and a Temporary Works Design Brief SEQ-CL-019 used to plan the design. This must include:

- A risk assessment
- A description of engineering design required, including reference to location, client specifications or clause constraints
- Record of Plant Registration numbers for scaffold systems
- Preferred/non-preferred methods, systems or types of equipment

- Particular loading conditions
- Perimeter edge protection during falsework/formwork erection,
- Storage and working platforms for subsequent façade work etc.
- Whether scaffold platforms must be level with building floors/slabs
- Whether access is required directly from the scaffold to the building
- Any clearances required for later addition of cladding or veneer to the building façade
- Whether stairs/stretcher access is required
- Site access requirements e.g. vehicular or other access openings in the scaffold structure
- Location of powerlines
- Unique site issues e.g. heritage building work, restricted street access, work over water
- A scaffold concept drawing.

The supplier of the scaffold should respond with a drawing or a documented process of how the scaffold will be constructed in accordance with the relevant standards. Scaffolding must be designed, manufactured, imported and supplied in accordance with the requirements of AS/NZS 1576 Parts 1 to 5. Scaffolding must be erected or dismantled in accordance with the relevant requirements of AS/NZS 1576 Parts 1 to 5 and General Guide for Scaffolds and Scaffolding Work by competent persons. Warning signs and danger tags must be placed on an incomplete scaffold to prevent unauthorised access and use.

Non-modular high risk scaffold such extended span scaffold, canter lever, combination systems or suspended scaffold needs to be engineered by a qualified structural engineer with completed drawings and instructions for assembly. When constructed, an approved engineering certificate stating that the scaffold has been built and completed according to the design and standards must be provided by an independent certifying engineer before commencement of work. A Scaff-Tag must be completed and put at each erected Scaffold and be inspected by a certified person before use, after repairs or alterations and at least every 30 days. A handover certificate must be provided before use and reissued after repairs or alterations and competent person inspections.

Prefabricated scaffolding must have a Plant Design Registration issued by a WHS regulator. The design registration number for prefabricated scaffolding must be kept readily accessible on site.
If components of different brands are used, a Plant Design Registration for each must be kept readily accessible. Plant Design Registrations for prefabricated scaffold do not have an expiry date

Any changes or alterations are to be completed by a suitably qualified scaffolder. In the event of any tampering or unauthorised removal or changes to the scaffold, this need to be reported immediately to the Site Supervisor who will immediately close the scaffold for use and organise to have the scaffold repaired and certified by a qualified person.

No work shall be done on or near a metal scaffold that is less than 4.5 metres horizontally or 6 metres below overhead electric wires. Materials and equipment must never be dropped or thrown from scaffolding but should be lowered carefully to the ground in a controlled manner.

6.7. Fall Prevention Systems

- Edge protection on a scaffold shall be in accordance with AS1576.
- Edge protection in the form of a guard rail on a stair, landing or fixed platform must comply with AS1657.
- Edge protection on any other open edge shall be fitted with a guard rail incorporating a toe board must comply with AS1657,
- Edge protection must be verified and inspected in accordance with manufacturers specifications and with AS1576.
- Edge protection must be subject to regular inspections in accordance with the requirements of legislation, codes of practice and Australian Standards.
- Refer to AS/NZS 4994—Temporary Edge Protection series for further guidance.

6.8. Fall restraint systems

A fall restraint system controls a person's movement by physically preventing the person from reaching a position at which there is a risk of a fall. It consists of a harness that is connected by a lanyard to an anchorage or horizontal lifeline which is set up to prevent the wearer from reaching an unprotected edge. This type of restraint system is

suitable for use where the user can maintain secure footing without having to tension the restraint line and without the aid of another handhold or lateral support.

When deciding whether secure footing can be maintained, consider:

- The slope of the surface
- The supporting material type
- The texture of the surface and whether it is likely to be wet, oily or otherwise slippery.

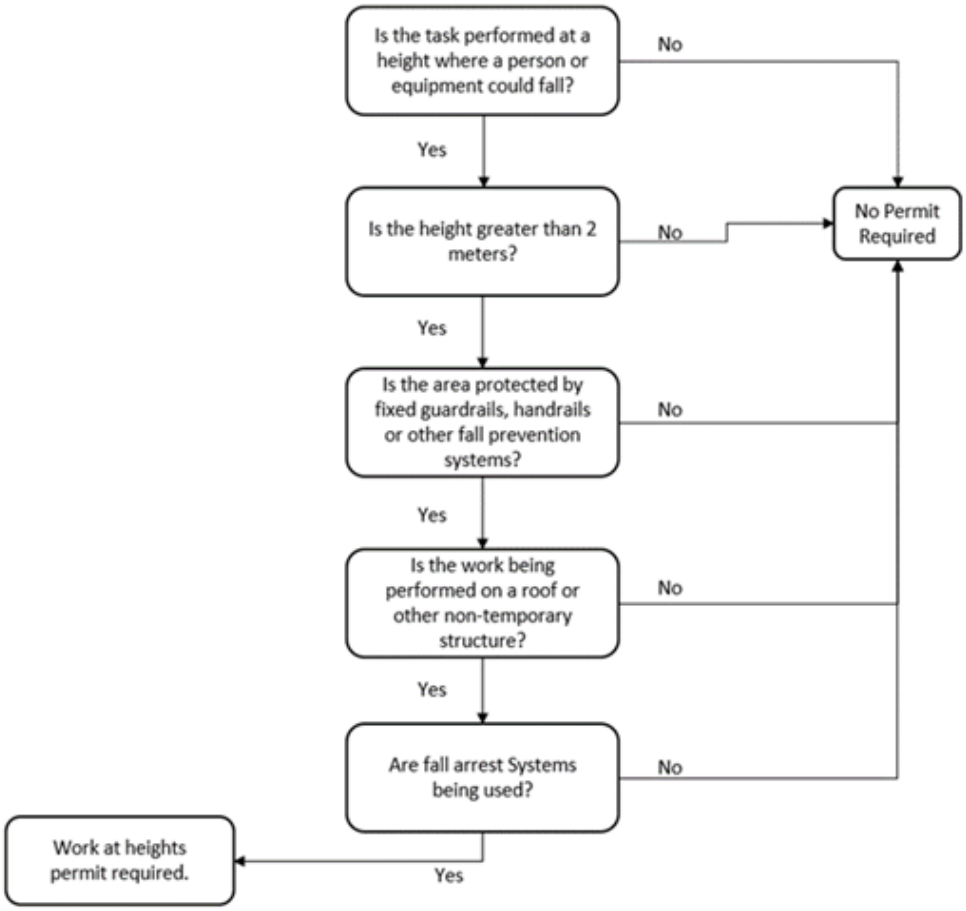
This restraint techniques must only be used if it is not reasonably practicable to prevent falls by carrying out work on the ground or on a solid construction, or by minimising the risk using a fall prevention device, such as providing a physical barrier, for example a guardrail. A restraint system should be installed by a competent person in accordance with the manufacturer's instructions. Restraint anchorage should be designed for fall arrest loading.

6.9. Administrative Controls

For all working at heights wear there is a risk of fall, the following documentation must be in place:

- SEQ-FM-026 Working at Heights Permit
- JSEA
- SWMS
- Signage
- Delineation
- Rescue Plan - An emergency drill must be performed to evaluate the effectiveness of any rescue plan.
- SEQ-FM-065 Overhead Powerlines Permit must be used where the working at heights is in close proximity to overhead powerlines.

To determine when a working at heights permit is required, follow the below flowchart.



6.10. Fall Arrest Systems

Where it is not reasonably practicable to provide a work positioning system such as a restraint technique, a fall arrest system must be used in addition to other controls which may be implemented to reduce the risk of falls while working at heights. PPE and equipment such as safety harnesses, lanyard assemblies, static safety lines, slings, inertia reels and other fall arrest devices must be used to ensure that a person will survive a fall when working at heights.

Workers must be competent to identify when and which type of fall arrest equipment must be used in each situation. Most lanyard assemblies have a standard working length of 2 metres with the shock absorbing section stretching out to a maximum of 1.75 metres when a worker falls. If the anchor point is made at foot level the potential maximum fall may be between 2.75 and 3.75 metres which can be reduced by 2 metres by anchoring above the level of the head. A full body harness must be worn when using a lanyard assembly.

Harness-based fall arrest systems should be installed so that the maximum distance a person would free fall before the fall arrest system takes effect is 2 metres, although a lesser free fall distance is preferable. There should be sufficient distance between the work surface and any surface below to enable the system, including the action of any shock absorber, to fully deploy.

A horizontal static line to provide fall protection must only be used by a maximum of two people at the same time recognising that if one person on a static line falls the second one will usually fall as well. The stretch in a static line forms part of the protection so the amount of stretch needs to be considered when determining the potential risks of a fall. In the event of a fall, a fall arrest must be such that impact on the body and serious injury is minimised and it is also important Identify what the rescue requirements are for a given work situation.

Safety anchor equipment should be secured above shoulder or head height and as close to directly above the worker as possible to minimise fall distance and the likelihood of a swinging effect resulting from the fall. Existing structures should be used or anchor points installed in accordance with AS/NZS 1891. Each anchorage point should be located so that a lanyard of the system can be attached to it before the person using the system moves into a position where they could fall. Handrails are not considered an appropriate anchor point for fall arrest systems.

The building or structure and anchorage points shall be assessed by an engineer unless it is clear to a competent person that the anchorage system is structurally adequate. Anchorage systems shall be installed by a trained person in accordance with the manufacturers' specifications and calculations for the purpose of the anchor system.

Each installation must have a sign stating the following:

- Name of the installer & date
- The highest purpose in category Table 3.1 (below)
- The maximum number of people allowable tethered to the restraint.

Particular care is needed for anchorages for horizontal lifelines for strength in the directions required. The general requirements for anchorages are set out in the table above however the anchorages strength shall be as set out in the manufacturer's instructions which will usually be considerably greater than the 15kN required for single point anchorages.

Table 3.1 from AS/NZS 1891).

TABLE 3.1

STRENGTH REQUIREMENT FOR ANCHORAGES

kilonewtons

	Purpose of anchorage	Ultimate strength in direction of loading (minimum) (see Note 1)
(a)	*Single point anchorages*	
	Free fall-arrest—one person	15
	Free fall-arrest—two persons attached to same anchor	21
	Limited free fall-arrest (including rope access anchorages)	12
	Restrained fall-arrest—restraint line anchorage	6
	Total restraint only—no risk of a fall	6
(b)	*Horizontal lifelines* (see Note 2)	
	End anchorages	See Clause 6.2.4
	Intermediate anchorages	
	—diversion less than 15 degrees	12
	—diversion 15 degrees or more	12+ (see Note 3)

NOTES:

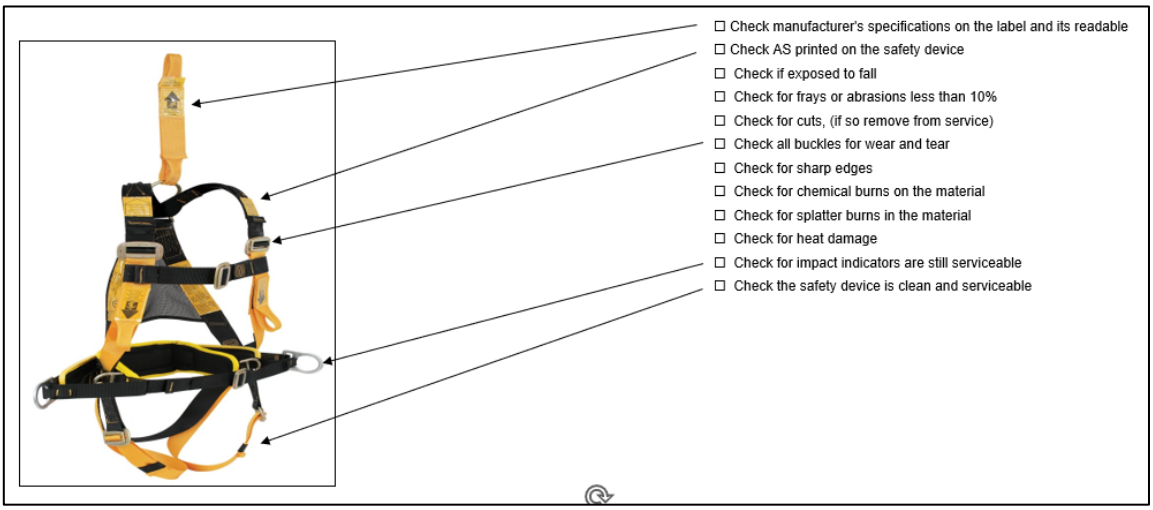
1 As far as practicable all single point one-person anchorages should meet the 15 kN requirement regardless of primary purpose.

2 Refers to fall arrest only. Lifelines used for total restraint only are not covered by this Standard. Advice should be sought from manufacturers. The designer of a horizontal life line that is to be used for total restraint purposes only is advised to adopt a horizontal force of 6 kN acting at right angles to the line as the basis for design and in particular for the calculation of end-anchorage forces, taking appropriate multiplying factors into account.

6.11. PPE

Storage of PPE must be in a cool, dry place. Equipment should not be exposed to excessive heat, direct sunlight, and high levels of humidity or be in contact with corrosives or other possible causes of damage. General cleaning is with warm soapy water. Self-locking hooks may need occasional lubrication of the spring with penetrating oil.

All Harnesses must be recorded on SEQ-FM-027 Lifting & Harness Gear Register or a Sub-Contractors form when they become in use on site. Any equipment where the manufacturer's information cannot be read or has been involved in a free fall incident must be destroyed or sent back to the manufacturer for resetting. Any equipment more than ten years old must be destroyed. Prior to each use, workers must visually inspect their equipment and ensure that it is safe to use.



The table below summary of harness inspections requirements in accordance with AS/NZS1891.4:2009. All inspections other than the daily inspection before use must be performed by the manufacturer or supplier.

Item	Inspection Frequency
Personal equipment including harnesses, lanyard assemblies, connectors, fall arrest devices including common devices	To be inspected by Operator before and after each use.
Belts, harnesses, lanyard assemblies and associated personal equipment. Fall arrest devices (external inspection only) Ropes and slings	6 monthly inspection by a heigh safety equipment inspector (more frequently if recommended by manufacturer or supplier)
Entry/re-entry of equipment to service	All equipment to be inspected by a height safety equipment inspector before use.
All items which have been stressed as a result of a fall	Inspection by a height safety equipment inspector before further use.

6.12. Monitoring of Controls

All controls which are implemented to reduce the risk of falls while working at heights must be regularly monitored and reviewed and if required they must be modified or updated to ensure that the risk of fall is as low as reasonably practicable.
Safe access/ egress must be maintained at all times in areas where working at heights is being undertaken.

6.13. Rescue from falls

A rescue plan must be developed for each instance of working at heights and specific to the scope of works, which must be included in the SWMS. The emergency and rescue procedures must be tested to ensure that they are effective, and workers must be provided with suitable and adequate information, training and instruction in relation to the emergency procedures.

The rescue of a worker who is suspended in a full body harness should occur promptly to prevent suspension intolerance and to treat any injuries sustained during the fall and fall arrest. A worker should not use a fall arrest system unless there is at least one other person on the site who can rescue them if they fall.

If a worker has fallen from heights and is suspended it is important to affect a rescue as soon as possible to prevent **Suspension Intolerance. T**he following should take place:

- If they are conscious, you may guide them to the ladder, EWP or Crane with man cage, pending what's available and the working situation,
- If they are unable to move or unconscious, the emergency number "000" should be called,
- If person is unconscious the preferable option is to use an EWP. If this is not available try to secure a ladder and take some of the weight from the fallen person legs to take the pressure off the femoral artery, until help arrives.

7. Training

All persons involved in working at heights, including design, installation, inspection, verification and equipment use must have acquired through training, qualification or experience the knowledge and skills to carry out the task and be competent to perform such works in accordance with SEQ-PR-069 Training and competency procedure.

8. Relevant Templates, Forms and Checklists

SEQ-FM-026	Working at Heights Permit
SEQ-FM-027	Lifting & Harness Gear Register
SEQ-FM-028	Ladder Register
SEQ-FM-065	Overhead Powerlines Permit
SEQ-PR-001	Risk Management Procedure
SEQ-PR-069	Training and Competency Procedure.
SEQ-PR-040	Temporary Works Design Procedure