Business Procedure

Work at Height
Document Number – OHS-PROC-100

This document applies to the following sites:

All Sites	☒

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1.0 Purpose

This Business Procedure describes Stanwell's minimum mandatory requirements for managing work at height risks. It describes the management systems and control measures that are required to manage risks associated with people falling from one level to another and objects falling from height.

This Business Procedure requires the application of the hierarchy of control to manage risks and highlights that elimination of the source of the risk must be sought in the first instance. Requirements for the types of the controls selected are also outlined.

2.0 Scope

This Business Procedure applies throughout Stanwell, all its sites and all activities under Stanwell's control. It applies to all Stanwell employees and contractors, including visitors to Stanwell workplaces.

3.0 Actions

Sites must ensure:

- the requirement for personnel to work at height is eliminated where reasonably practicable
- work at height is planned
- equipment used for work at height is certified fit for use
- personnel performing work at height are trained and competent
- work at height is assessed to identify potential hazards and ensure suitable risk control measures implemented.

Fall from height risks must be controlled through the application of the Hierarchy of Falls Controls (See Figure 3.0.1) to achieve the highest level of protection that is reasonably practicable in the circumstances.

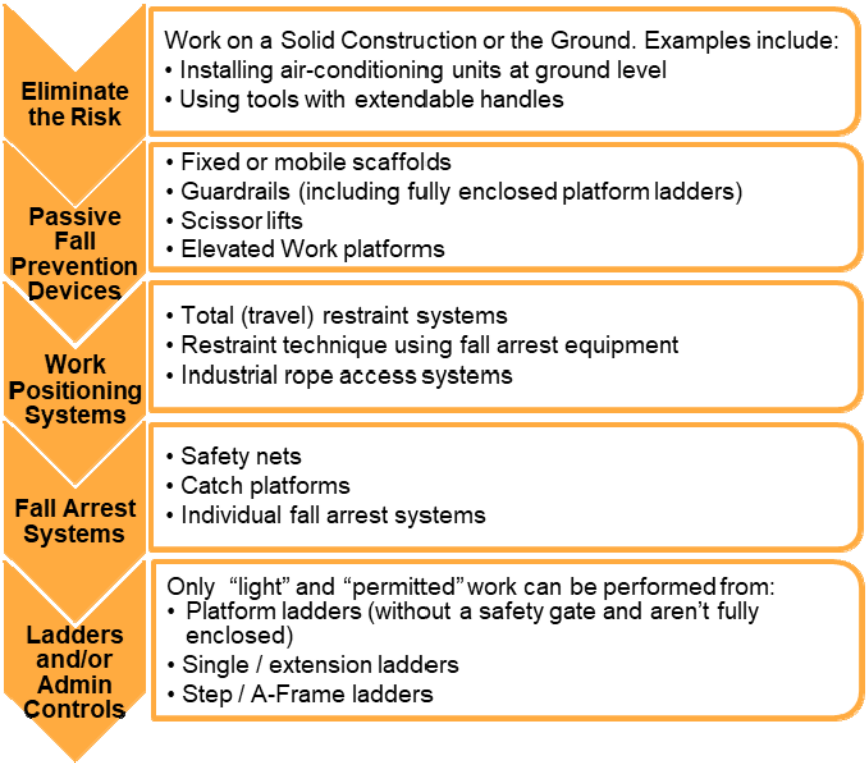


Figure 3.0.1: Hierarchy of Falls Controls (derived from *Managing the risk of falls at workplaces Code of Practice for 2021* QLD).

3.1 Design

Stanwell must ensure that the designers of plant and structures consider the whole life cycle of the plant or structure and eliminate or minimise the risk of falls at the design stage.

Sites must:

- Identify foreseeable work at height during the design of facilities and consider future maintenance requirements.
- Identify opportunities for installing fixed gantries and walkways.
- Refer to *Managing the risk of falls at workplaces Code of Practice 2021* QLD for more details on design requirements.

3.2 Safe Work System Requirements

Sites must control work at height under the Safe Work System using a Safe Work Authorisation (SWA) that includes a Hazard Identification Risk Assessment (HIRA) or a Safe Work Method Statement (SWMS) if there is a fall from height risk where:

- there is a risk of falling more than 2 metres (not including scissor lift use) AND
- there is no compliant fixed edge or fall protection; OR
- a fall arrest system is proposed to be used as the *primary* means of control.

For work at less than 2 metres perform a risk assessment to determine the risk of falling from one level to another and risks from falling objects.

3.2.1 Emergency Response

Sites must ensure rescue/emergency response plans are in place to respond to work at height incidents.

If personnel are using fall arrest systems, the rescue/emergency response plan must detail how rescue from height will be achieved. Sites must ensure that there is an appropriate number of

competent persons on site who can rescue a person in the event they fall using a fall arrest system.

For rescue plans associated with the use of fall arrest systems, the prevention of suspension intolerance must be considered and planned for. Specific requirements for emergency procedures and plans are detailed in Business Procedure *OHS-PROC-312 Emergency Response Framework* and *Rescue/Emergency Response Plan T-3076*.

Specific requirements for first aid provisions associated with work at height shall be risk assessed and detailed in *Rescue/Emergency Response Plan T-3076*.

Rescue/Emergency Response Plans are not required for travelling and transportation of boom type EWPs if conditions under section **3.4.5.2** are met.

3.3 Work Environment Requirements

3.3.1 Barricading and Signage

As far as reasonably practicable, barriers or barricading must be used in conjunction with signage to cordon off areas where there is a risk of falling or being hit by falling / dropped objects. Signage must clearly identify the designated drop zone and the specific hazard. *Note: If signage is used without barricading, additional controls such as security measures (e.g. safety observers monitoring the designated area from a safe distance to prevent unauthorised access) may be required.*

As far as reasonably practicable, all non-essential personnel and equipment must be kept clear of any work area(s) where there is a risk of falling from height or being struck by a dropped object. Access control measures include:

- restricted access areas limited to the authorised personnel needed to perform the work; and
- drop zones (no-entry zone) where personnel are not permitted while the hazard is present or active (e.g. when personnel are working at heights overhead and there is a risk of being struck by falling / dropped objects).

When determining drop zones / no-entry zones, sites shall consider potential deflection paths caused by falling objects hitting obstacles. Determination of drop zones / no-entry zones should be justified using any available legislative guidance or industry standard calculations. Barricading and signage must be used in accordance with Business Procedure *OHS-PROC-134: Barricading and Signage.* For falling object risks associated with lifting operations, also refer to the Business Procedure *OHS-PROC-08: Lifting Operations.*

3.4 Plant and Equipment Requirements

3.4.1 Work at Height Plant & Equipment

All equipment used for work at height must:

- be certified fit for use and meet all regulatory requirements; and
- be inspected by a competent person in accordance with the manufacturer's recommendations; and
- undergo regular scheduled maintenance in accordance with manufacturer's instructions.

For further information on plant, refer to Business Procedure *OHS-PROC-132: Powered Mobile Plant*. Where the work at height relates to persons potentially having to gain access to elevated areas on mobile plant and vehicles (for maintenance, load securing and unloading, etc) and there is a fall risk, sites must ensure that plant have adequate controls implemented.

3.4.2 Workboxes

Workboxes may be used where it is not reasonably practicable to use a preferred working platform such as an EWP, scaffold or fully enclosed platform ladder.

Specific controls for using workboxes are outlined in:

- *OHS-PROC-100E: Workboxes & Elevating Work Platforms – Stay Safe*
- *AS 1418.17; AS 2550.1 & AS/NZS 1891.4* for workboxes designed to be suspended from cranes.
- *AS 2359.2*; & *AS 2359.1* for workboxes or platforms supported by forklifts.

For additional details on the safe use of workboxes, refer to Business Procedure *OHS-PROC-08: Lifting Operations*, as well as *the Mobile Crane Code of Practice 2006 and Managing the risk of falls at workplaces Code of Practice 2021* QLD (5.1. Temporary work platforms).

3.4.3 Scaffolding

Sites must ensure that all scaffolding is designed, erected and dismantled to meet relevant legislative and Australian Standard requirements, including but not limited to:

- *Work Health and Safety Regulation 2011* QLD (s. 225, s306P-Q)
- *AS/NZS 1576* Scaffolding series
- *Managing the risk of falls at workplaces Code of Practice 2021* QLD
- *Scaffolding Code of Practice 2021* QLD

Specific Stanwell requirements for design, compliance, approval, access and safe use of scaffolds are detailed in:

- *OHS-PROC-100D: Scaffolding Design Compliance and Approval – Stay Safe*
- *OHS-PROC-100F: Scaffolding Access and Safe Use – Stay Safe*
- *T-3133 Critical Control Verification - Working at Heights*

3.4.4 Scaffolding Design

Scaffolds must be designed by a competent person (the Designer). Design verification must also be completed by an Engineer if scaffolding meets requirements under ***Appendix C*** *Design Verification and Initial Inspection Table*.

The Designer of the scaffold must take into account:

- the strength, stability and rigidity of the support 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 including the requirement of emergency access for stretchers and use of non-flammable screening (hoarding) products
- the safety of persons in the vicinity of the scaffold including adequate exclusion zones for electrical apparatuses and potential for scaffold collapse

Information regarding the design and design verification of a scaffold must be provided by the scaffold Designer to the scaffold erector (Erector) and detailed in the scaffold plan.

Specific types of scaffold require engineering design verification and initial inspections. See details contained within **Appendix C** – *Scaffold Design Verification and Initial Inspection Table.*

A scaffold plan must be prepared by a competent person and the design verification approved by a competent person (see **Appendix C** for *Scaffolding Code of Practice 2021* QLD requirements) prior to work commencing for any scaffold greater than 4m. The person doing the scaffold work must prepare a scaffold plan and provide this plan to Stanwell before scaffolding work commences. The Erector or persons conducting scaffolding works must hold the appropriate level scaffold licence and be competent to carry out works.

For a template of a scaffold plan refer to T-2788: Scaffold Plan - For Scaffolds greater than 4 metres high.

For the minimum requirements of a scaffold plan, refer to section 2.1.3 Scaffold Plans of the *Scaffolding Code of Practice 2021.*

Where prefabricated scaffolds are used on site they are to be erected in accordance with the manufacturer's recommendations, instructions and associated safe use documentation including the manufacturer's instructional erection diagrams. This design verification if above 4 m is to be completed by an Engineer.

The person responsible for the erection and/or modification any scaffold must provide Stanwell with a handover certificate/ initial inspection, which is to be kept on site until the scaffold has been dismantled.

For a template of a Scaffold Handover Certificate refer to T-3788: Scaffold Inspection / Handover Certificate.

All scaffolding must be managed using the Scaffolding Management System (Scafftag System) and certified by a licenced scaffolder.

All sites must maintain a scaffold register.

3.4.4.1 Gaps and Perimeter Containment Screening

There are commonly gaps between the working face of a scaffold and the building or structure being constructed or support structure (internal gap). Gaps should be reduced to as far as reasonably practicable to help prevent the fall of objects or introduction of trip hazards.

Perimeter containment screens must be made of mesh, timber, plywood, metal sheeting or other material suitable for the purpose. Ensure, where required, non-flammable screening products are used, for example, where there is a potential for hot work activities to cause ignition of flammable screening.

Ensure, environmental loads and climatic conditions are considered when adding containment screening to scaffolding components, including wind, rain and storms.

Specific details in relation to Gaps and Perimeter Containment Screening are outlined in *OHS-PROC-100F: Scaffolding Access and Safe Use – Stay Safe.*

3.4.4.2 Use of Fall Arrest Systems during Erecting and Dismantling

Fall arrest systems are not generally an appropriate control measure for erecting and dismantling scaffolds. Use of other, higher order control measures to prevent or minimise exposure to work at height risks should be utilised (e.g. use of handrails).

Fall arrest systems should only be considered and used during the following scaffold activities:

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

3.4.4.3 Safe Use of Scaffolds

Prior to accessing scaffolds, sites must ensure all persons are 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.

Refer to *OHS-PROC-100F: Scaffolding Access and Safe Use – Stay Safe*

3.4.4.4 Scaffolding Inspections

Sites must ensure that all scaffolds are inspected regularly by a competent person.

Refer to *OHS-PROC-100D: Scaffolding Design, Compliance & Approval – Stay Safe*

Specific types of scaffold require engineering design verification and initial inspections. See details contained within **Appendix C** – *Scaffold Design Verification and Initial Inspection Table.*

Sites must maintain inspection records on site until the scaffold has been completely dismantled. Scaffold inspection records must include:

- location
- individual identification number (equivalent system)
- comments regarding each inspection
- date and time of inspection.
- relevant design or specification reference.
- name of the person who conducted the inspection (including signature).
- purpose for the scaffold

Suspended scaffold components shall be inspected for damage, wear and cracks before use and at pre-determined intervals. Non-destructive testing (NDT) for cracks shall occur in high stress areas (e.g. dye penetrant testing) and must be completed at least every three (3) years.

For Stanwell owned scaffolding, full fitness for use inspections including design verifications and testing of components shall be undertaken as per manufacturer's and the competent person's recommendations. These inspections will be in accordance with *AS 1576 Scaffolding* and *AS/NZS 4576 Guidelines for Scaffolding* are to be undertaken on all components at least annually.

3.4.5 Elevating Work Platform (EWP) Requirements

Guardrail systems are the primary control for fall protection in EWPs, however, harness-based systems that use fall arrest components for work at height are required to be used with all *boom type* mobile elevating work platforms.

As fall arrest harness components are required when operating in a boom-type EWP, a safety observer must be always present, and an appropriate Rescue / Emergency Response Plan is required (unless specified in section 3.4.5.2).

Scissor-lifts or vertical personnel lifts do not require the use of harness-based systems, unless a risk assessment indicates that they should be worn, however, if this is the case the user must consider all other reasonably practicable alternative methods of working at height before proceeding.

The only time an EWP may be used to enter or exit a work area is when conditions are met as per *AS2550.10: Cranes, hoists and winches - Safe use - Mobile elevating work platforms* Section 5.9.

EWPs must only be used on a solid level surface, unless they are designed for use on rough terrain. The user must inspect the work area prior to use to ensure there are no penetrations or obstructions that could cause uncontrolled movement or overturning of the EWP. In addition, underground services should be considered when operating EWPs on unfamiliar natural ground (e.g. vegetated areas). This process should be completed using a HIRA/SWMS.

Refer to *Business Procedure OHS-PROC-132: Powered Mobile Plant* for the minimum requirements that apply to the use of an EWP.

Refer to *OHS-PROC-100E: Workboxes and EWPs Stay Safe* for further requirements on the safe use of EWPs.

3.4.5.1 Requirements for Harness-Based Systems for Work at Heights

Selection of the harness-based system should be based on the hierarchy of control as per section 3.8. From the anchor point, the lanyard length should be short enough to prevent a person reaching a position where they could fall.

Refer to **Appendix D** for Elevating Work Platform Association (EWPA) guidance on lanyard length in EWPs.

3.4.5.2 SWA and Emergency Response Plan Exemptions for EWP use

A SWA and Rescue/Emergency Response Plan is not required during the travelling and transportation (see section 8.0) of a boom-type Elevated Work Platform (EWP) if the following conditions have been met:

1. The appropriate fall arrest is selected that allows for a minimum fall distance above the fall zone (see section 3.4.5.1 for guidance on use of fall arrest on EWPs) and;
2. Travelling as per section 8.0 definition from one work area to another; or
3. Transportation of the EWP as per section 8.0 definition (Chain of Responsibility (CoR) and a risk assessment or SafeStart processes followed); and
4. The EWP is travelling more than 6.4 metres of distribution power lines (≤133 kV) or more than 10 metres of transmission power lines (>133 kV); and
5. There are no hazards identified that may impact the ability for the EWP to be operated in a safe manner, including, rough terrain (unstable ground conditions), overhead hazards or electrical hazards. If hazards are identified, a SWA is required.

3.4.5.3 Requirements for a Safety Observer when Using EWPs

For boom lift type EWPs 11 metres or greater, the Safety Observer requires a high-risk work licence (HRWL).

For all EWPs the Safety Observer must be familiarised for the specific EWP type used, so that they are able safely lower the EWP platform in an emergency if required.

The Safety Observer can perform dual roles of Safety Observer (Electrical) and Safety Observer (Operating Plant) so long as the requirements of each of these positions can be met.

3.4.5.4 Managing Overhead Hazards and Crush Injuries in EWPs

To reduce the risk of an unintended platform rise and subsequent potential crush injuries, the following are required to be considered during planning:

- Risk assessment (HIRA/SWMS), travel and rescue plan are to be prepared and discussed between all involved. The EWP selected is suitable for the work environment and specific manoeuvre to be carried out.
- Safety observers must fully understand the details of the risk assessment, the work plan and the rescue procedure.
- All EWPs will be fitted with a pressure sensing secondary guarding device. In the event where an EWP is not fitted with a secondary guarding device, a risk assessment must be submitted and approved. The risk assessment must outline the risk control measures to be implemented and assurance that the scope of operation will not be located where there is potential to work near overhead obstructions.

Refer to *OHS-PROC-100E Workboxes and EWPs - Stay Safe* for further requirements.

3.4.6 Portable Ladders

Portable ladders are designed to be used as a means of access and egress and should not be used as a working platform. Only use a portable ladder for 'Permitted Work' and 'Light Work' *(See 8.0 Definitions for meaning of 'Permitted Work' and 'Light Work')* of a temporary nature which can be carried out safely. Workers should use purpose-built work platforms including scaffolds and elevating work platforms (EWPs) in preference to portable ladders where possible when undertaking work at heights.

Step platform ladders consisting of a small working platform and handrails provide improved fall protection to conventional single or step ladders and should be considered before other portable ladders where practicable. In instances where a step platform ladder has a safety gate fitted at the access point and can fully enclose a worker on the work platform (preferred), the Light Work and Permitted Work related restrictions no longer apply as the step platform has features more akin to a purpose-built work platform.

Ladders must be transported and stored in such a way that no injury to persons or damage to the ladder occurs.

Sites must maintain a ladder register.

Ladders are to be inspected:

- when originally purchased, received and put into service
- before each use by the user
- annually
- if a ladder has been involved in an event resulting in damage (impacted or dropped) or exposed to excessive heat, such as fire or a corrosive substance.

Inspection requirements should at least meet the criteria set out in *Form T-2709 Portable Ladder Inspection Checklist.*

Any ladder that is identified as being damaged or has parts missing is to be tagged / marked and taken out of service until it is repaired or destroyed. Inspection records must be maintained.

For further information on the selection, safe use and care of portable ladders refer to *AS/NZS 1892 Portable Ladders,* "Section 9. Ladders" in *Managing the risk of falls at workplaces Code of Practice 2021* and *OHS-PROC-100C: Portable Ladders – Stay Safe*

3.5 Falling Objects

Controls must be implemented when there is the potential for objects to fall from height. The hierarchy of controls must be adopted when implementing falling object control measures.

Key controls to be implemented where reasonably practicable include, but are not limited to:

- Penetrations and voids in active work areas are to be filled in or covered (i.e. use of pipe penetration covers) where there is a risk of objects falling;
- Tool lanyards are to be used when working with tools that have the potential to fall;
- Chin straps are to be fitted to all helmets and are to be utilised when working at a height or looking over a handrail;
- Personal drop kits should be used where possible.

3.6 Edge Protection

Sites must ensure where it is not reasonably practicable to eliminate fall from height risks, Temporary edge protection is used where practicable. In particular, the following work tasks are specifically suited to the use of edge protection:

- raised platforms and roof edges where personnel access is required to carry out work activities
- removal or modification to handrails

- lifting floor panels.

Sites must ensure that temporary edge protection is installed in accordance with *AS/NZS 4994: Temporary edge protection* and the manufacturer's instruction or the instructions of an engineer or competent person.

3.7 Protection for holes, openings and penetrations

Any penetration with dimensions of more than 100 mm x 100 mm, or a diameter more than 100 mm, where there is a risk of objects or people falling is to have a fall protection cover fitted to it to prevent potential fall from height.

Where a fall protection cover is used to protect persons from falling into a penetration, it must be:

- able to withstand the impact of any person who may stand or fall on it
- securely fixed in place to prevent it being moved or removed accidentally.

Covers must be made of a material that is sufficiently strong and designed for the size of the penetration and any static or dynamic impact and point loads that could be imposed (people, plant or equipment).

3.8 Harness-Based Systems for Work at Height

Harness-based systems for work at height may be used to achieve the following functions:

- Work positioning
- Fall arrest

The below figure provides a visual representation of the preferred hierarchy of harness-based control options for managing the risk of falls.

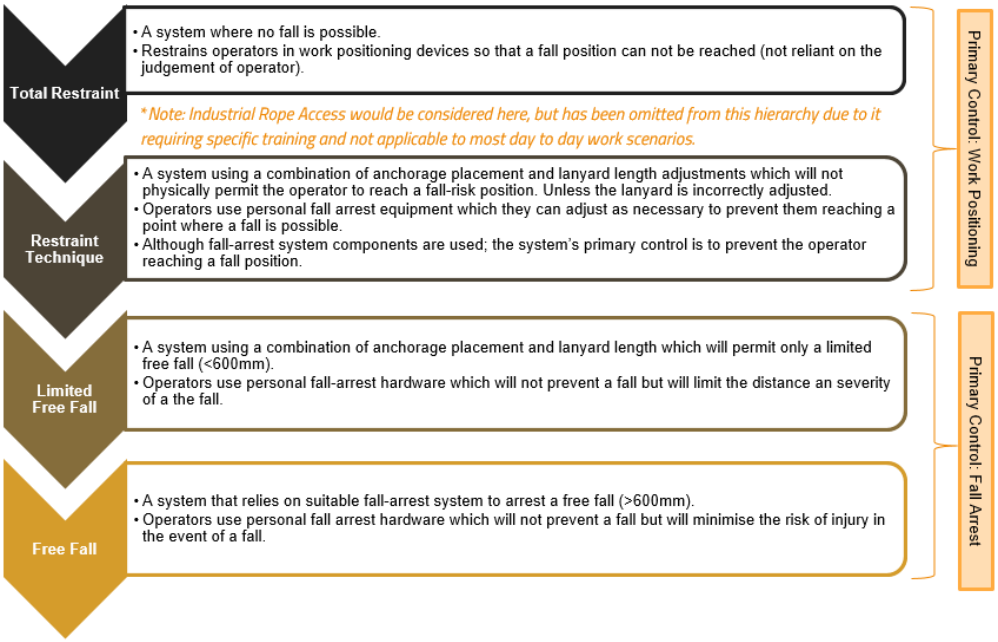


Figure 3.8.1: Hierarchy of Harness-Based Work at Height Control Options (derived from *AS/NZS1891.4* Figure 1.2)

Harness-based systems consist primarily of personal protective equipment. As such, these systems are considered a lower form of control than working on the ground, on a solid construction, or using a fall prevention device, therefore should only be considered if such higher level controls are deemed not reasonably practicable. However, in most cases a harness-based system must be used in conjunction with such controls; i.e., building a scaffold, operating an EWP or working in a suspended scaffold.

Harness-based systems where **work positioning** is the primary control include:

- **Total (travel) restraint** for work on a predominantly horizontal surface.
- **Industrial rope access** for vertical, inclined, overhung or free space work.
- **Restraint technique** where an adjustable fall arrest system is connected to an anchorage or horizontal lifeline to restrict the user's travel on a horizontal surface.

Harness-based systems where **fall arrest** is the primary control include:

- **Limited free fall arrest** where the free fall distance is less than 0.6m.
- **Free fall arrest** where the free fall distance is more than 0.6m but less than 2m.

All harness-based system components must be inspected:

- At least once every 6 months by a competent person who provides a written record of inspection.
- By the user prior to their use to ensure they are clean and safe to use.
- In accordance with the manufacturer's instructions.
- In accordance with *AS/NZS 1891.4 Industrial fall arrest systems and devices – Selection, use and maintenance*.
- If the equipment has been used to arrest a fall, prior to any further use, a competent person must deem the equipment as safe to use.

All harness-based system components must be:

- Tagged indicating currency.
- Taken out of service where it has been identified by the user or an inspection to be unsafe.
- Cleaned and stored in accordance with manufacturer's instructions.

3.8.1 Work Positioning Systems

3.8.1.1 Total (Travel) Restraint Systems

A total restraint system means a system that:

- consists of a harness, attached via lanyard(s), to a static line or anchorage point; and
- is designed to restrict the travelling range of a person wearing the harness so that they could not fall off an edge or through a surface.

A total 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. Total restraint systems are usually only found on permanent installations or on completed structures. Job sites with variable work conditions and work tasks do not usually meet the requirements for the safe use of total restraint systems.

For further information on installation, safe use and inspection requirements of total restraint systems refer to *OHS-PROC-100B: Total (Travel) Restraint – Stay Safe*.

3.8.1.2 Industrial Rope Access Systems

While industrial rope access systems are considered to be a work positioning system, due to the level of technical training, competence and supervision required for this form of control to be effective, other methods of accessing a workface must be considered before rope access systems.

For requirements on the use of Industrial Rope Access systems, refer to *AS/NZS 4488 Industrial rope access systems* series and *AS/NZS ISO22846 Personal Equipment for protection against Falls - Rope Access Systems.*

3.8.1.3 Restraint Technique

Restraint technique is defined in *AS/NZS 1891.4:2009* as *"Control on a person's movement by use of a fall arrest system, which entails connection to an anchorage using an adjustable lanyard or other adjustable component that can be adjusted for length as necessary to physically prevent the person from reaching a position at which there is a risk of a free or limited free fall."*

Restraint technique may fail to prevent a fall, and therefore is not suitable, in some or all of the following situations:

- The user may inadvertently reach a position where a fall over an edge is possible; or
- The user makes an error in adjusting the length of an adjustable lanyard such that a free fall position can be reached; or
- There is the danger of the user falling through the surface; or
- There is support failure on a moveable platform leading to a fall; or
- There are any other reasonably likely misuses or failures of the system that could lead to a free fall.

To cover the above eventualities, when using restraint technique, all equipment and anchorages must be fall arrest rated.

Restraint technique is not a total restraint system. Work positioning is the primary control and although fall arrest components are used, the primary control intent is to prevent the operator reaching a fall position. However, as fall arrest system components (harness and lanyards) are used, these components must meet *AS/NZS 1891* requirements.

For further information on installation, safe use and inspection requirements for using restraint technique refer to *OHS-PROC-100G: Restraint Technique – Stay Safe*.

Note: The user must ensure that appropriate controls for restraint technique are used in the Safe Work System HIRA and controls for total restraint, are used for total restraint only.

3.8.1.4 Fall Arrest Systems

The use of fall arrest systems is the lowest level of fall protection control and as such may only be used as a primary control where no other reasonably practicable option is available and where it's use has been authorised by the Safe Work Coordinator. The following factors must be considered prior to authorising the use of fall arrest systems as a primary control for work at height:

- Suitability of personnel to use fall arrest systems, taking into account such things as pre-existing injuries and medical conditions (e.g. epilepsy or vertigo).
- Appointment of a trained and dedicated standby person, assigned to continuously monitor the worker (visually) and to initiate a rescue if required.
- Established communication system to summon help in an emergency.

- Provisions of trained, competent personnel with appropriate equipment to rescue a fallen worker.
- Protection of others in the area.
- Suitability of the fall arrest lines giving consideration to the work environment and whether the type could withstand failure if it came into contact with environmental hazards (i.e. edges such as concrete or steel beam edges).

When working using a fall arrest system, users should ensure appropriate head protection is used to protect them from head injury in the event of a fall.

There must be personnel available on site who can rescue a person if they fall whilst fall arrest equipment is being used.

It is also preferred that retractable lanyards are used on safety harnesses as an alternative to fixed length lanyards when used in a fall arrest situation to enable continuous fall protection and a significant increase in mobility.

Double retractable lanyards are preferred over twin tail lanyards. Retractable lanyards prevent fall arrest and reduce the fall exposure to limited free fall allowing self-rescue.

A person suffering a fall when secured by a fall arrest system shall:

- Be connected to a fall arrest rated anchorage (refer to **Table 2** for ratings).
- Be subjected to an arresting force not exceeding 6kN. This may be achieved by way of an energy absorbing lanyard or a self-retracting lifeline (with shock absorber).
- Be wearing equipment that distributes fall arrest forces over the body in a way that will minimise the possibility of injury. This is achieved by way of a correctly fitted, appropriately sized, full body harness.
- Be connected to a system which avoids the user reaching the ground or striking any other obstacle that will cause injury. Factors affecting this include:
  - Clear unobstructed distance below the user:
    - Height and position of the anchor
    - Length of the lanyard
    - Free fall distance
    - Elongation of the lanyard and extension of the energy absorbing element
    - Deflection of any horizontal lifeline (if applicable)
    - Pendulum effect
  - Be connected to the system in such a way as to maintain the user in a suitable post fall arrest attitude for rescue purposes. This can be achieved by attachment of the lanyard to the sternal or dorsal fall arrest attachment points of the harness.
  - Be wearing a harness which is designed (or has provisions) to avoid or reduce the likelihood of suspension intolerance (trauma) (i.e. fitted with foothold straps).

For further information on installation, safe use and inspection requirements for using fall arrest systems refer to *OHS-PROC-100H: Fall Arrest Systems – Stay Safe*.

Limited Free Fall Arrest

Limited free fall arrest is the arrest of a fall where the fall distance before the fall arrest system begins to take any loading is less than 600mm either vertically or on a slope on which it is not possible to walk without the assistance of a handrail or hand line.

Limited free fall arrest systems are preferred over free fall arrest systems, as the risk of injury to the fallen worker is lower with the reduced free fall distance.

All controls listed for free fall arrest systems apply to limited free fall systems however the minimum strength of a limited free fall arrest anchorage may be reduced to 12kN.

Free Fall Arrest

Free fall arrest is the arrest of a fall where the fall distance before the fall arrest system begins to take any loading is in excess of 600mm, either vertically or on a slope on which it is not possible to walk without the assistance of a handrail or hand line. The maximum free fall distance shall not exceed 2m.

A fall arrest system must be designed with the following considerations:

- Connection to, and disconnection from the system must be made in a safe location, i.e. where no fall risk exists
- Persons at risk of an injury producing fall must remain connected to the fall arrest system at all times. This may necessitate the use of twin tail lanyards or other methods of moving within the work area while remaining connected to anchorages.

Inertia Reels

Inertia Reels should be used in accordance with the manufacturer's instructions. The use of inertia reels may not be effective in certain situations, for example, if a worker falls down the inclined surface of a steeply pitched roof, the inertia reel line may keep extending.

Lanyards should not be used in conjunction with inertia reels as this can result in an excessive amount of free fall prior to the fall being arrested.

Inertia reels should not be used as working supports (by locking the system and allowing it to support the user) during normal work as they are not designed for continuous support.

3.9 Anchorage Points

Anchorage points for fall arrest harness systems are to:

- be located so that the user can connect their lanyard or device to the system prior to moving into a position where they will be at risk of a fall from height; and
- be designed, inspected and approved for safe use by a competent person prior to work commencing; and
- be used in accordance with the manufacturer's user instructions; and
- have a suitable capacity for the type of fall arrest system being used and the number of persons using the anchor point. See guidance in **Table 2**.

Consider the following when selecting an anchorage:

- Anchorage strength – As far as reasonably practicable, all single point anchorages should be for a single person attachment and should have an ultimate strength of at least 15kN regardless of primary purpose. Lesser strengths may be used in accordance with **Table 2**.
- Anchorage position – Anchorages should be positioned as high as reasonably practicable in order to reduce the free fall distance, thereby reducing the risk of injury from a fall.

A travel restraint system erected as means of preventing falls from height is to have an anchorage point capable of withstanding reasonably expected loadings from a person who may use it and not less than 15kN (the actual anchor strength may be considerably higher for restraint static line systems where multiple workers may be reliant upon common anchorages).

Sites must ensure designated anchorage points comply and are inspected and maintained in accordance with *AS/NZS 1891.4: 2009 Industrial fall arrest systems and devices*.

Fixed and portable anchorages should be manufactured and tested to the requirements of *AS/NZS 5532:2013 Manufacturing requirements for single point anchor device used for harness-based work at height.*

Fixed permanent anchorages must be installed by an authorised installer in accordance with the manufacturer's installation manual and inspected by an authorised inspector at intervals not exceeding 12 months or as specified by the manufacturer.

Drilled in anchorages such as glue in or friction anchorages require a proof load test to be performed prior to initial use and as part of subsequent inspections.

The installer of a prescribed configuration horizontal lifeline must have a current high risk work licence for rigging. If the horizontal lifeline is a proprietary system as per *AS/NZS 1891.2:2001*, the installer may also require authorisation from the manufacturer.

Fixed temporary and portable anchorage devices must be inspected at intervals not exceeding 6 months or as specified by the manufacturer.

The use of slings and large opening hooks as an anchorage requires a higher level of user awareness than the use of other anchorage devices, as such, preference should be given to the use of purpose built anchorage devices such as beam clamps, beam gliders, etc. Selection of a structural component of adequate strength requires judgement. Such judgement is gained through experience and is not attained during an initial training course. Therefore, provision should be made to ensure personnel are competent and have an appropriate level of supervision when selecting and using anchorages for harness-based work at height.

Table 2. Strength Requirement For Single Point Anchorages

Purpose of Anchorage	**Ultimate Strength (in direction of loading)**
Free fall arrest (1 person)	15kN
Free fall arrest (2 persons)	21kN
Limited Free Fall arrest (1 person)	12kN
Limited Free Fall arrest (2 persons)	18kN
Industrial Rope Access	12kN

Reference: AS/NZS 1891.4:2009, Table 3.1, Strength Requirement for Anchorages.

Anchorage strengths are specified as ultimate strengths with kilonewton (kN) as the unit of measure. This is often confused with working load limits and safe working loads, particularly when using slings as anchorages. The following information is included as a guide to determine ultimate strength of round polyester lifting slings from their working load limit.

WLL (kg)	Colour	Rigged	Ultimate strength (kN)
2000	Lime green	Straight	140
2000	Lime green	Choked (square)	70
1000	Purple	Straight	70
1000	Purple	Choked (square)	35
500	Olive	Straight	35
500	Olive	Choked (square)	17.5

Note: Round polyester lifting slings manufactured in compliance with *AS 4497:2018* have a safety factor of 7:1

3.10 Catch Protection

Catch protection may only be used as a secondary control method across all Stanwell sites. A catch platform is a temporary platform located below a work area to catch a worker in the event of a fall. The platform should be of robust construction and designed to withstand the maximum potential impact load. Scaffolding components may be used to construct fixed and mobile catch platforms.
Catch platforms should:

- incorporate a fully planked-out deck; and
- be positioned so the deck extends at least two metres beyond all unprotected edges of the work area, except where extended guard-railing is fitted to the catch platform; and
- be positioned as close as possible to the underside of the work area—the distance a person could fall before landing on the catch platform should be no more than one metre; and
- always be used with an adequate form of edge protection.

Catch platforms that include the use of a cantilevered, spur or tube and coupler scaffolding system must be installed by people who:

- hold a high risk work licence for intermediate or advanced scaffolding, or
- are enrolled in a training course to obtain the relevant high risk work licence and are being supervised by the holder of the relevant high risk work licence.

Catch platforms installed on prefabricated scaffolding systems from which a person or object could fall more than 4 metres must be installed by people who:

- hold a high risk work licence for basic scaffolding, or
- are enrolled in a training course to obtain the relevant high risk work licence and are being supervised by the holder of the relevant high risk work licence.

Industrial safety/catch nets used as a means of catch protection are to be used as a last resort only, where edge protection and harness-based systems are not reasonably practical.

Industrial safety/catch nets used as a means of catching a person who may fall are to:

- be designed by an engineer or competent person; and
- be installed and used in accordance with the manufacturer's or supplier's safety instructions; and
- be made of material that is of sufficient strength to catch a person and be designed to minimise injury to a person once they have fallen into the net; and
- have energy absorbing qualities that reduce the shock to a person falling into the net.

Industrial safety/catch nets are to be installed so that they have sufficient tension and clearance to prevent a person who falls from contacting or striking any surface or structure below the net.

Safety/Catch nets used in conjunction with basic rigging or scaffolding work must be erected and serviced by people who:

- hold a high risk work licence for basic rigging or basic scaffolding, or
- are enrolled in a training course to obtain the relevant high risk work licence and are being supervised by the holder of the relevant high risk work licence.

Industrial safety/catch nets are to be installed so that they are as close as possible below the platform or level at which the person could potentially fall**,** but no more than two metres below the working area.

Nets are not to be used in locations or environments where they may be damaged due to the presence of chemicals, heat or ash.

Nets are to be inspected after installation, relocation or repair on site and prior to personnel working in a position where they could fall onto the nets.

Nets must be kept free from materials and other items that can accumulate.

4.0 Relevant Psychosocial Hazards

Working at heights is recognised as a potential psychosocial hazard for some workers who may have a phobia of heights. Where a worker feels that their psychosocial safety may be compromised, the worker is to report this to their supervisor or manager to ensure adequate controls are implemented.

5.0 Monitor and Review Work

Monitor work involving risk of falls to ensure personnel are working in accordance with the requirements of the HIRA/SWMS, this procedure and any permits relevant to the work.

As per Section 38 of the WHS Regulation, sites must review and as necessary revise fall control measures:

- When the control measure does not control the risk so far as is reasonably practicable.
- Before a change at the workplace that is likely to give rise to a new or different health and safety risk that the control measure may not effectively control.
- If a new hazard or risk is identified.
- If the results of consultation indicate that a review is necessary; or
- if a health and safety representative requests a review.

6.0 Training and Competency Requirements

Sites must ensure that all personnel who are responsible for using, maintaining, installing and inspecting work at height equipment are trained and competent.

Sites must ensure that all personnel involved in or who carry out work at height have been trained and assessed as competent in accordance with Stanwell's requirements.

Sites must obtain and maintain evidence of training and competency.

7.0 References (Including Information Services)

Source	Reference
Legislation	• Qld Work Health and Safety Regulation 2011 • Qld Managing Risks of Falls at Workplaces Code of Practice 2021 • Qld Scaffolding Code of Practice 2021 • Qld Managing the Risks of Plant in the Workplace Code of Practice 2021
Australian Standards	• AS 1418.17 Cranes (including hoists and winces) – Design and construction of workboxes • AS/NZS 1576 Scaffolding series • AS/NZS 1891 Industrial fall-arrest systems and devices series • AS 1892 Portable ladders • AS 2550.10 Cranes, hoists and winches – Safe use. Part 10: Mobile elevating work platforms. • AS/NZS 4488 Industrial rope access systems • AS/NZS 4576 Guidelines for scaffolding • AS/NZS 4994 Temporary edge protection • AS 2359 Powered Industrial Trucks • AS/NZS 5532:2013 Manufacturing requirements for single-point anchor device used for harness-based work at height
Business Procedures	• Barricading and Signage – OHS-PROC-134 • Emergency Response Framework – OHS-PROC-312 • Excavation and Penetration – OHS-PROC-126 • Lifting Operations – OHS-PROC-08 • Powered Mobile Plant – OHS-PROC-132 • Safe Work System – Safe Work Authorisation – OHS-PROC-142 • Personal Protective Equipment – OHS-PROC-30
Stay Safe	• Work at Height – OHS-PROC-100A • Total (Travel) Restraint - OHS-PROC-100B • Portable Ladders – OHS-PROC-100C • Scaffolding Design Compliance and Approval – OHS-PROC-100D • Workboxes and EWPs – OHS-PROC-100E • Scaffolding Access and Safe Use - OHS-PROC-100F • Restraint Technique - OHS-PROC-100G • Fall Arrest Systems - OHS-PROC-100H
Tools	• Critical Control Verification – Falling Objects – T-3129 • Critical Control Verification – Work at Height – T-3133 • Rescue / Emergency Response Plan - T-3076 • Scaffold Plan – For Scaffolds greater than 4 meters high – T-2788 • Scaffold Inspection / Handover Certificate – T-3788

8.0 Definitions

Term	Meaning
Anchorage Point	A secure point for attaching a lanyard, lifeline or other component of a travel restraint system technique or fall arrest system. Anchorages require specific load and impact capacities for their intended use.
Basic Scaffolding	Scaffolding work involving any of the following: • modular or prefabricated • cantilevered materials hoists with a maximum working load of 500kg • ropes • gin wheels • safety nets and static lines • bracket scaffolds (tank and formwork)
Competent person	In relation to managing the risks of falls, a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task. (Scaffolding) In relation to performing design or inspection or other task for a control measure, is a person who has acquired, through training, qualifications or experience, the following knowledge and skills: • sound knowledge of relevant Australian Standards, relevant codes of practice and other relevant legislation • ability to read and interpret drawings • sound knowledge of, and competence in, the risk management process for the erecting, altering and dismantling of scaffold systems, including: – hazard identification and risk assessment – measures to control exposure to risks – safe work practices and procedures – how to plan and prepare scaffolding.
Edge Protection	Edge protection is a type of fall prevention device where a barrier to prevent a person falling is erected along the edge of: • a building or other structure; or • an opening in a surface of a building or other structure; or • a fall arresting platform (a platform installed to arrest the fall of a person who falls from a building or other structure); or • the surface from which work is to be done. Edge protection shall be used as a control measure in accordance with WHS Regulations sections 306D and 306E.
Engineer	Means a person who: (a) is a registered professional engineer under the *Professional Engineers Act 2002*; and (b) is competent to perform the task.
Electrical Work	The manufacturing, constructing, installing, testing, maintaining, repairing, altering, removing, or replacing of electrical equipment
Elevating Work Platform (EWP)	EWPs are mobile items of plant designed to lift or lower people and equipment by a telescopic, hinged or articulated device, or a combination of these, from a base support.

Term	Meaning
Fall	The fall of a thing or a person from one level to another.
Fall Arrest System	An assembly of interconnected components comprising a harness connected to an anchorage point or anchorage system either directly or by means of a lanyard or pole strap, and whose purpose is to arrest a fall in accordance with the principles and requirements of *AS/NZS 1891.4*
Fall Prevention	Device or system of work that completely eliminates the risk of a fall from height, enabling a person to move safely to and from the workplace. Note: A 'fall prevention device' is material or equipment—or a combination of both—designed to prevent a fall for temporary work at heights, that once in place after initial installation does not require any ongoing adjustment, alteration or operation by any person to ensure its integrity. Fall prevention devices include secure fencing, edge protection, working platforms and covers.
Fall Protection Cover	Is a type of fall prevention device. It is a structure that: • is placed over an opening in a surface of a building or other structure to prevent a person falling through the opening • consists of solid sheets of sturdy material.
Full Body Harness	An assembly of interconnected shoulder and leg straps, with or without a body belt, that is used where there is the likelihood of free fall or restrained fall and is compliant with current standards.
Hoist	An appliance intended for raising and lowering a load or people, vertically and without slewing which includes a mast climbing work platform, personnel and materials hoist, scaffolding hoist and serial hoist but does not include a lift or building maintenance equipment.
Lanyard	An assembly consisting of a line and components which will enable connection between a harness and an anchorage point and will absorb energy in the event of a fall.
Light Work	As defined by WHS Regulation 306O Work that is light having regard to the following— (a) the amount of physical exertion involved; (b) the physical capacity of the person doing the work; (c) the range of movement involved; (d) the weight or bulk of materials or equipment involved. *Examples of light work—* • *painting* • *installing a roof gutter, air-conditioning duct or lighting* • *placing pine roof trusses in position on the roof of a low-set house* • *performing inspections or tests* • *installing an electrical connection.* *Examples of work that is not light work—* • *fixing plaster board sheeting to an internal stairwell void* • *fixing cladding to a gable end of a roof* • *using a medium or heavy duty angle grinder or circular saw*
Permitted Work	As defined by WHS Regulation 306A "Permitted work, in relation to work involving a ladder, means work in which— (a) the weight, size or shape of any equipment or material the person using the ladder is carrying is not likely to—

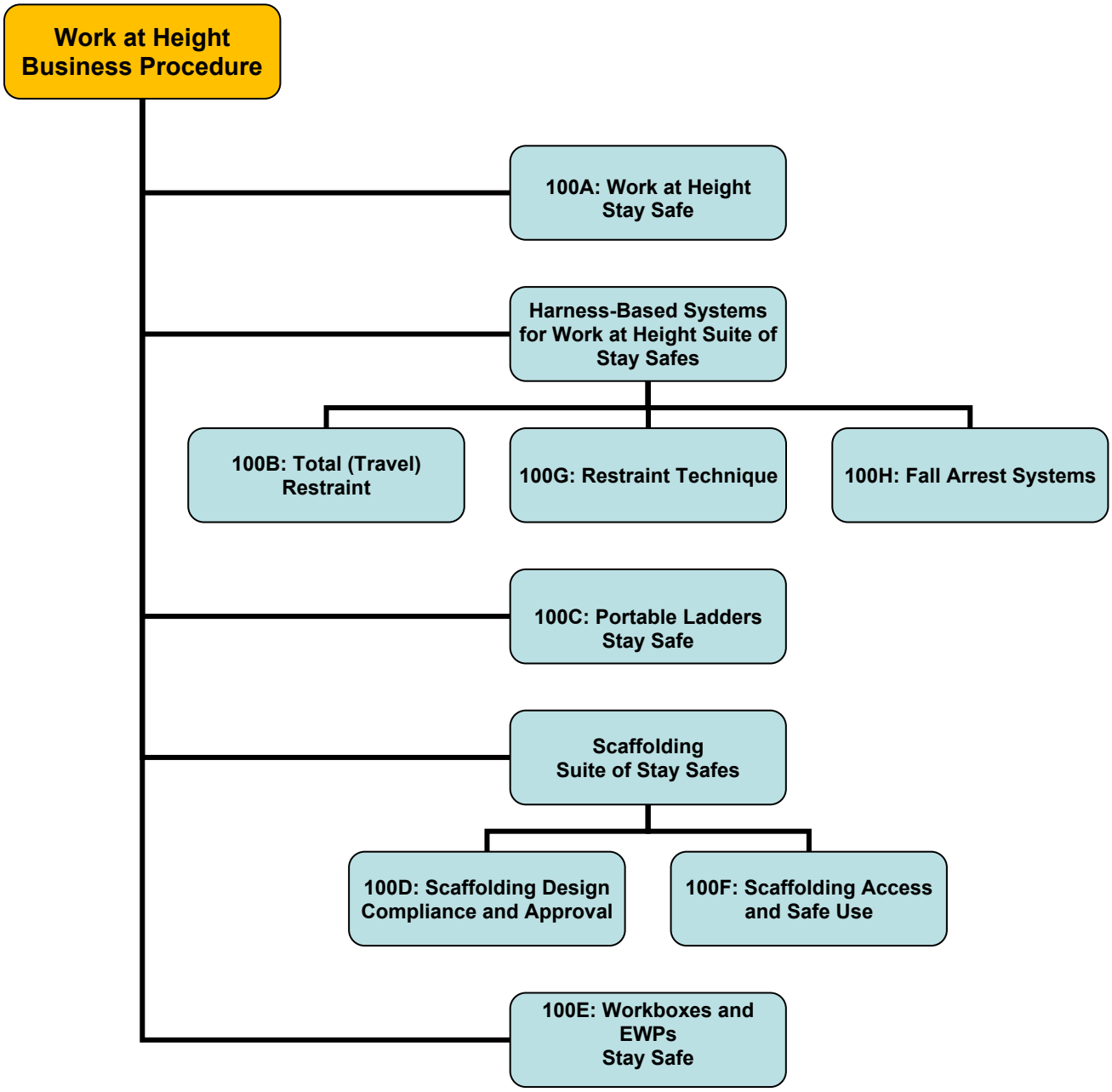
Term	Meaning
	(i) restrict the person's movement while the person is climbing or descending the ladder; or (ii) cause the person to lose balance on the ladder while carrying out the work; and (b) the person's trunk is approximately centred over the centre of the space between the sides of the ladder from when the person is fully on the ladder to when the person is leaving the ladder; and (c) any equipment being used by the person can be operated using 1 hand unless a control measure designed to support the person's body is being worn or used. Example of a control measure— a strap, commonly known as a pole strap, that fits around a pole and is attached to a harness worn by the person"
Personal Protective Equipment (PPE)	Personal protective equipment (PPE) is a device or appliance used or worn by a person to minimise risk to the person's safety and health.
Restraint Technique	Refer to section 3.8.1.3 of this Procedure.
Risk of a Fall	A circumstance that exposes a worker while at work, or other person while at or in the vicinity of a workplace, to a risk of a fall that is reasonably likely to cause injury to the worker or other person. This includes circumstances in which the worker or other person is: • in or on plant or a structure that is at an elevated level • in or on plant that is being used to gain access to an elevated level • in the vicinity of an opening through which a person could fall • in the vicinity of an edge over which a person could fall • on or in the vicinity of a surface through which a person could fall • on or near the vicinity of a slippery, sloping or unstable surface.
Scaffolding	A temporary structure, specifically erected to support access platforms or working platforms.
Suspension Intolerance	A potentially fatal consequence of a person who has had a fall arrested while in a harness. The trauma arises from the impact on the body from the fall being suddenly arrested and from the gravitational forces while being suspended after a fall.
Transportation (EWP) AS 2550.10	Delivery of the EWP to or from the worksite.
Travelling (EWP) AS 2550.10	Any movement of the chassis except ***transportation.***
Travel restraint (total restraint) system	Refer to section 3.8.1.1 of this Procedure.
Work at Height	Work performed where there is potential for a person or an object to fall from one level to another.
Workbox	A personnel carrying device, designed to be suspended from a crane, to provide a working area from persons conveyed by and working from the box.

9.0 Revision History

Rev. No.	Rev. Date	Revision Description	Author	Endorse/Check	Approved By
0		Previously Tarong Energy document number.	T. Young		M. Joy
1	14.03.2014	Procedure updated to reflect the change in sites that this process applies to and change of process due to the Stanwell Merger replaces all legacy documents.	J. Paull	M. Joy	T. Hooper
	30.07.2014	Typo noted in Appendix C in the Access & Egress section with 210mm changed to 2100mm, minor change no signatures required. Change requested by Jason Paull.	D. Wilkie.		
2	06.01.2021	Section 3.4.4 updated with the following text "with an energy absorbing lanyard." Change requested by K. Ussher.	T. Lawback	L. Lucke	K. Ussher
3	23.05.2023	Complete review of document in consultation with site HSE Committees and identified stakeholders. Includes new requirements of the new Code of Practice (COP) Scaffolding 2021 and updates from AS/NZS 1891.4:2009 Amd 1:2021 Industrial fall arrest systems and devices - Selection, use and maintenance.	C. Rothman	L. Lucke	K. Ussher
4	30.05.2023	Document updated with minor change.	Carl Rothman	Lindsay Jahn	Letitia Lucke
	26.09.2023	Minor wording change on Page 8, Section 3.4.5.2, Point 4 – changed 'within' to 'more than'. As requested by Lindsay Jahn. Refer 23/116874.	Requested by Lindsay Jahn Action by Shannon Scott		
5	05.03.2024	Minor amendment made only to provide further clarification on scaffold handover certification	Carl Rothman	Letitia Lucke	Kriss Ussher

10.0 Appendices

Appendix A: Work at Height Document Flowchart



Appendix B: Summary of Inspection Requirements

Refer to Table 9.1 in *AS/NZS 1891.4 Industrial fall-arrest systems and devices – Selection, use and maintenance*. Indicative excerpt below:

TABLE 9.1

SUMMARY OF INSPECTION FREQUENCIES

Items	Reference	Inspection frequency (Note 1)
Personal equipment including harnesses, lanyards, connectors, fall-arrest devices including common use devices	Clause 9.2	Inspection by a height safety operator (see Note 2) before and after each use.
Harnesses, lanyards, associated personal equipment	Clause 9.3.2	6-monthly inspection by a height safety equipment inspector (see Note 3)
Fall-arrest devices (external inspection only)	Clause 9.3.4(a)	
Ropes and slings	Clause 9.7	
Anchorages—drilled-in type or attached to timber frames	Clause 9.3.3	12-monthly inspection by a height safety equipment inspector (see Note 3)
Anchorages—other types	Clause 9.3.3	Frequency of inspection by a height safety equipment inspector as recommended by the manufacturer to a maximum of 5-yearly. 12-monthly inspection in the absence of such recommendations (see Note 3)
Fall-arrest devices—full service	Clause 9.3.4(b)	Frequency of service by a height safety equipment inspector as recommended by the manufacturer to a maximum of 5-yearly. 12-monthly service in the absence of such recommendations (see Note 3)
Horizontal and vertical lifelines—steel rope or rail	Clause 9.3.5	Frequency of inspection by a height safety equipment inspector as recommended by the manufacturer to a maximum of 5-yearly. 12-monthly inspection in the absence of such recommendation (see Note 3)
Horizontal or vertical lifelines —fibre rope —webbing	Clauses 9.3.5 and 9.7	6-monthly inspection by a height safety equipment inspector (see Note 3)
All items of personal and common use equipment	Clause 9.4	Inspection by a height safety equipment inspector on entry or re-entry into service (see Note 3)
All items which have been stressed as a result of a fall.	Clause 9.5	Inspection by a height safety equipment inspector before further use (see Note 3)

NOTES:

1 Where used in harsh conditions, more frequent inspection may be required.

2 If the user or operator of the equipment is not competent to carry out this inspection it is to be undertaken by another person who is competent, see Clause 9.2.

3 All inspections except those by the operator are to be documented (see Clause 9.10).

Reference: AS/NZS 1891.4 Industrial fall-arrest systems and devices – Selection, use and maintenance, p. 68.

Appendix C: Scaffold Design Verification and Initial Inspection Table

The following table indicates when an engineer should design verify and inspect various scaffolds.

Type of scaffold	**Design verification** (1), (3), (4)	**Initial inspection** (2)
Minor scaffold (less than 2 m TWP) or modular scaffold (less than 4 m TWP)	Supplier or competent person	Competent person
Modular scaffold 4 m to maximum height (5) (6)	Supplier or competent person	Scaffolder
Modular scaffold (with cladding) above 4 m (5) (6)	Supplier or engineer	Scaffolder
Modular scaffold outside of standard documented manufacturer's parameters (7)	Engineer	Scaffolder
Tube and coupler scaffold greater than 33 m TWP or outside of scope of *AS/NZS 1576.6*	Engineer	Scaffolder
Cantilevered steel beams, trusses or ladder beams (8)	Engineer	Scaffolder
Cantilevered or spurred scaffold (greater than 6 m high)	Engineer	Scaffolder
Bridging beams, truss or ladder beams (greater than 4.8m span or 6m of scaffold above)	Engineer	Scaffolder
Hung or drop scaffolds (8)	Engineer	Scaffolder
Independent free standing or guyed scaffold towers – greater than 4 m TWP (including aluminium static or mobile tower more than 9 m TWP)	Engineer	Scaffolder
Crane lifted scaffold (9)	Engineer	Scaffolder and Crane Dogger
Access birdcages (10) (with cladding or more than 20 m TWP)	Engineer	Scaffolder
Mobile scaffold – greater than 4 m TWP (excluding standard aluminium mobile scaffolds)	Engineer	Scaffolder
Stair tower – independent or attached (more than 20 m high)	Engineer	Scaffolder
Gantry or overhead protection structures	Engineer	Scaffolder
Loading bays (greater than 9 m TWP or 2T) (11)	Engineer	Engineer
Suspended scaffold (swing-stage and supports)	Engineer	Engineer
Perimeter demolition scaffold (more than 9 m high)	Engineer	Engineer
Public access structures (requiring Building Code of Australia compliance)	Engineer	Engineer

Table 1 *Planning construction activities (design and inspection table)*

Notes:

1. Design documents can be produced by a competent person provided they are based on tables, charts, brochures or information which has previously been verified for compliance with *AS/NZS 1576* by a suitably qualified person such as a Registered Professional Engineer of Queensland (RPEQ) engineer experienced in the design of temporary works.
2. Initial inspections prior to use for compliance with all design documents to be carried out by a suitably qualified scaffolder unless noted otherwise. Ongoing and 30-day inspections may also be completed by a suitably qualified scaffolder or experienced engineer.
3. Minor non-structural changes to scaffold such as smaller bay size substitution, hop up moves, stair location etc. do not require additional engineering verification.
4. Scaffolds that require an undocumented structural change should be referred to the designer or engineer for approval and/or inspection.

5. Maximum height refers to a manufacturer's maximum approved height. Different systems will have different approved heights and loading configurations. These details should be included as part of the scaffold documentation.
6. Scaffolds over 30 m with staggered tie patterns on adjacent legs may often require specific engineering design due to the large leg loads and buckling effects of unsupported standards.
7. Complex scaffolds where standards are not continuous from top to bottom (typically some industrial type scaffolds and large civil works) should be certified by an engineer.
8. Due to the complexity or critical nature of a scaffold, the designer may deem it necessary to have engineering inspections.
9. Inspections of crane lifted scaffold should be undertaken by both the scaffolder and the crane dogger to ensure all lifting points and methods are clearly communicated to all parties. The crane crew is not expected to inspect or verify the scaffold but only to be made aware of the designed lifting arrangements. Lifting points and slinging arrangements are to be designed by an engineer.
10. In accordance with *AS/NZS 1576*, some types of equipment that incorporate temporary working platforms may not be considered to be a scaffold. These types of equipment may include formwork support systems erected primarily for the support of concrete and should be designed and used in accordance with *AS 3610* and the Formwork Code of Practice.
11. All loading/landing bays that exceed the duty rating of the scaffold need to be design verified by an engineer.

Reference: Scaffolding Code of Practice (2021), Table 1 Planning construction activities (design and inspection table), p15-16.

Appendix D: Elevating Work Platform Association of Australia (EWPA) Information sheet

Fall Arrest Systems in EWPs

"An adequate free fall clearance is the minimum height the platform floor must be above the ground (or other surface) that would prevent an ejected operator from striking the ground. To determine an adequate free fall distance the following must be considered:

- *Length of the lanyard*
- *Height of the operator*
- *'Tear out' length of the personal energy absorber*
- *Height of the lanyard attachment point in the platform*

"Taking these factors into consideration, an adequate free fall clearance would typically be achieved when the floor of a MEWP platform is at a height of more than 3.5m above the ground (or other surface) but may be as low as 1.5m."

Reference: ELEVATING WORK PLATFORM ASSOCIATION OF AUSTRALIA – POLICY ON THE USE OF FALL ARREST SYSTEMS IN ELEVATING WORK PLATFORMS: Section 3.3 Lanyard Length