



NOV-HSE-08-PRO-001 WORKING AT HEIGHT

NOVA OPERATION
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1. PURPOSE

This procedure provides details of the requirements to control risks associated with work on or access to places where there is potential for a person to fall from one level to another, this includes working on roofs, suspended ceilings, other high structures or at depths.

2. SCOPE

This procedure applies to all Nova personnel, contractors, and visitors to the mine site.

3. DOCUMENT REVIEW OR CHANGE

This procedure shall be reviewed as a minimum.

- At intervals no greater than 2 years ;
- When there is a change in Legislation, Code of Practice, Australian Standard, or other relevant reference material; or
- In the event of an incident to which this procedure was relevant.

4. WORKING AT HEIGHTS TRAINING

The requirements for training and assessment of competency are as follows:

- All personnel that are required to undertake work at height activities shall hold a valid nationally recognized height safety competency issued by a Registered Training organisation (RTO) conducted within the last 2 years.
- Personnel shall always work in compliance with that competency training
- Persons shall be reassessed by a RTO at 2 year intervals to maintain their competency to conduct tasks associated with Work at Heights.
- The training that is provided to persons and the achieved competencies shall be recorded in the approved Learning Management System (LMS).

5. APPLICATION REQUIREMENTS

5.1 Working at Height

Work at height is defined as work that involves risks associated with a fall by a person from one level to another that is reasonably likely to cause an injury to the person. This includes gaining access to areas or working:

- Within three (3) metres of an unprotected edge or opening with a potential drop of two (2) metres or more
- On or near a surface through which a person could fall
- On or near the vicinity of a slippery, sloping or unstable surface.

5.2 Risk Management

All work at a height above two (2) metres shall be performed under a Work at Heights Plan, a Permit to Work and an approved JSEA/SWI or equivalent.

Identified Work at Height tasks above two metres shall be reduced by using control measures based on the hierarchy of control to provide a safe system of work.

The following control systems should be considered in the following priority order:



- **Working on the ground or on a solid construction-** bring the job to ground level so that there is no risk of falling.
- **Use of Fall Prevention Devices-** Put up solid barriers or handrails to prevent falls. ie scaffolding
- **Use of a Work Positioning System-** Use a platform to work from i.e. an elevated work platform.
- **Use a Fall RESTRAINT System-** such as a purposely designed fixed length lanyard for the job that will stop the person reaching the edge.
- **Use of a Fall ARREST System-** such as a harness and lanyard with an energy absorber that will arrest the person if they fall and have a rescue method available.

No task shall be undertaken if the risk cannot be managed in accordance with the Hierarchy of Controls

Work that is conducted below two (2) metres in height requires a personal risk assessment (Take 5) that considers:

- An assessment of the work surface/platform.
- Access between the work levels.
- Barriers that will prevent a person from falling.

5.3 Working at Height Plan and Permit to Work

A Work at Height Plan and Permit to Work are required to be in place prior to working at a height tasks above 2 metres are conducted. Refer to Permit to Work Procedure – Nova-OHS- PRO-1310-00 and Work at height plan- FRM-1310-0008

The Permit to Work and accompanying Work at Height Plan requiring the use of fall arrest equipment, must be approved by Superintendent/Delegate or above before the work is undertaken.

The Superintendent/Delegate shall ensure that the JSEA/SWI is specific to the task, all risks have been identified, assessed, and controlled for the Work at Height task. The Supervisor shall review the Working at Heights Plan and included rescue plan to ensure that sufficient controls and resources are in place to adequately respond to a fall from height or any other foreseeable emergency.

Work Area Owner

The approving 'Work Area Owner' must be familiar with the various activities occurring in their area; it is their responsibility to be aware of:

- a. Permit to Work governed activities that are occurring in their area (simultaneous operations and potential conflicts), and
- b. the identity of relevant 'Permit Holders'.

The work area owner;

- Authorises work to proceed in the area that they are responsible for
- Has the right to refuse the approval of a Permit to Work
- Cannot be the Permit Holder



5.4 Use of ladders

Portable ladders purchased for use by IGO Nova personnel and ladders brought by contractors on to the site, shall be designed in accordance with AS 1892 Portable Ladders, Part 1 - Metal, and Part 2 - Timber or as amended. Ladders must be constructed to have a load rating of not less than 120 kg, and must be marked "industrial use only".

Ladders are primarily a means of access and egress. They should only be used as a working platform for light work of short duration that can be carried out safely on the ladder. Ladders should only be considered after safer alternatives have been considered and found not to be practicable

Ladders should not be used when;

- Carrying out hot work such as arc welding or oxy cutting. (unless a formal risk assessment has been completed)
- Working over other people

Under no circumstances is;

- More than one person allowed on a ladder at the same time.
- Metal or metal reinforced ladders to be used when working on live electrical installations.

Fall arrest/restraint equipment shall be used when;

- Using a stepladder/safety step near the edge of an open floor, penetration or beside any railing
- Undertaking a task that requires personnel to over-reach (the centre of the torso should be within the ladder stiles throughout the work)
- Using any power or hand tool requiring two hands to operate, such as cutting saws and angle grinders
- Using tools that require a high degree of leverage force which, if released, may cause the user to over-balance or fall from the ladder, such as pinch bars
- Standing on a rung closer than 900 mm to the top of a single or extension ladder
- Standing higher than the second tread below the top plate of any stepladder (with the exception of three-rung step ladders).

Portable stepladders shall:

- Not be used on working platforms to gain height above the protected edge.
- Be used only in the fully opened position.
- Be of a length that ensures a person's feet are not positioned any higher than the third highest tread.

Single and extension portable ladders are to:

- Be pitched at a slope greater than an angle of 1 horizontal to 4 vertical or less than an angle of 1 horizontal to 6 vertical.
- Extend 900 mm above the surface where a person can gain access.
- Be secured against movement and supported from a firm, level, non-slip surface.



- Not be used in access areas or within the arc of any door opening unless the access is barricaded and signed and the doors guarded or securely blocked.
- When a single or extension ladder is used, where it is not possible to secure the ladder against a wall or flat surface, the ladder shall be footed by an assistant at all times.
- Be used facing the ladder, maintaining three points of contact with the ladder at all times, until secured by a fall-prevention system.

CAUTION: A person ascending or descending a ladder is not to carry any item of equipment or tools. Equipment and tools will be hauled up only after the person is secured by a fall-prevention system.

Fixed access ladders with angles exceeding 75 degrees to the horizontal which are greater than 2 metres in length shall be fitted with a permanent or temporary fall-arrest system (anchorage lines or rails, retractable lanyards etc).

The angle of slope should not be less than 70 degrees to the horizontal and not greater than 75 degrees to the horizontal. In no case should the ladder overhang the person climbing the ladder. If the angle is more than 75 degrees, a full body harness with double arm lanyard or fall-arrest system shall be used if ladder length is greater than 2 metres.

Ladders constructed on site for fixed platforms, walkways or stairways shall comply with AS 1657 - Fixed Platforms, Walkways, Stairways and Ladders.

5.5 Fall Prevention Devices

Where practicable, work at heights is to be carried out from a fully decked work platform, with minimum dimensions of 450 mm by 450 mm which is fitted with an edge protection system. Access to work platforms is to be by ladders which are firmly secured and rise one (1) meter above the deck of the platform.

Work Fall prevention devices shall be correctly designed, installed and maintained by competent persons, they may include:

- Temporary work platforms such as scaffolding, elevating work platforms, mast climbing work platforms and crane workboxes.
- Perimeter guard rails with a top rail, mid rail and toe board located at the edges of roofs, structures, mobile surface equipment, and around shafts, open holes and other excavations.
- Work platforms on scaffolding which consist of planks or prefabricated platforms secured against uplift or displacement.
- Protective barricades and fencing
- Safety mesh (appropriately secured)

5.6 Use of Scaffolding

All scaffolding shall be erected in accordance with AS 1576- Scaffolding. All Scaffolds shall be erected by a competent person who has completed an industry recognised training course and holds the required High Risk Work licence (HRWL).



Persons erecting scaffolds shall use a fall-prevention system in situations above 2 metres where it is not possible to maintain three points of contact with the scaffold, i.e. using two hands to perform work.

Incomplete scaffolds are to have barriers erected on the access points and out-of-service tags on each such barrier.

Persons working from scaffold platforms shall not leave the confines of the platform edge protection without a fall-arrest system.

Mobile scaffolds may be used where it is not practicable or economical to use fixed scaffolding or as determined by the safe work plan. The height of the mobile scaffold must not be more than three (3) times the least base dimension. Mobile scaffolding shall be used:

- Where there is a requirement for regular movement of the working platform.
- Only when the supporting surfaces are hard and level.
- Only when stationary and the castors or wheels are locked.

Suspended scaffolds shall only be erected by specially authorized person with an advanced scaffolding certificate (or equivalent). Persons using a suspended scaffold are to:

- Remain inside the confines of the scaffold.
- Use a fall-prevention or fall-arrest system.

Scaffolds shall be inspected by an authorised scaffolder at a minimum every 28 days and carry a visible scafftag system at the entry point to the scaffold showing the load rating of the structure and date of the last inspection.

Scaffolds shall also be inspected by an authorised scaffolder after having sustained damage ie. been impacted by mobile plant and after general maintenance

5.7 Work Positioning Systems

Work positioning systems (or fall restraint systems) involve the use of equipment that enables a person to work in such a way that physically prevents the user from reaching a position at which there is a risk of a fall at an unprotected edge (e.g. with a harness and lanyard of a length which does not allow the person to reach the edge).

Work positioning systems may include:

- Industrial rope access systems for gaining access to and working at a workface (usually using vertically suspended ropes)
- Restraint techniques designed for fall-arrest loading and consisting of a harness that is connected by a lanyard to an anchorage or horizontal lifeline. The restraint technique shall physically prevent the user reaching a position at which there is a risk of a fall at an unprotected edge.

5.8 Fall Arrest Systems

In the situation where the permanent installation of edge protection, or the use of a fall prevention device, or the use of a work positioning system is not reasonably practicable a fall arrest system may be considered for use.



Fall arrest systems involve the use of equipment intended to safely stop a worker falling an uncontrolled distance and reduce the impact of the fall. Fall arrest systems may include:

- Catch platforms
- Industrial safety nets
- Individual fall-arrest systems, including safety harnesses and lanyards with shock absorber
- Anchorage lines or rails

Workers using fall arrest systems shall not be permitted to work alone.

All work at heights involving the use of a fall arrest system shall have adequate provisions made for the rescue of a person whose fall is arrested by a fall arrest device.

5.8.1 Fall Arrest Equipment and Lanyard Use

Fall arrest equipment includes but is not limited to; full body harnesses, shock absorbing lanyards, lifelines, rope grab devices, inertia reels, connectors and anchorage devices.

All fall arrest system equipment shall meet the relevant Australian Standard -AS/NZS 1891 Industrial Fall Arrest Systems and Devices. All new height safety products must be approved as a part of the site change management process.

All equipment must be correctly used in line with the manufacturer's instructions and must only be used with suitably compatible devices and equipment.

A competent person shall inspect all fall arrest/restraint equipment immediately prior to use. Any equipment identified with a defect shall immediately be tagged out of service and removed from the workplace. Only persons trained in the correct use of a harness and fall restraint / arrest attachments for working at heights are permitted to use them.

The following restrictions apply when using fall arrest/restraint equipment;

- At all times a karabiner shall be used to connect to a static line.
- Lanyards shall not be hooked back on themselves. (Back hooking)
- Shock absorbers shall be connected directly to the harness.
- An inertia reel can be attached to any suitable anchor or to a static line using a carabiner or a shackle.
- Inertia reels shall only be used in a vertical position with a maximum of 30-degree variation from the vertical.
- Industrial fall-arrest systems and devices shall be stored and used in accordance with the manufacturer's instructions.
- Fall arrest harnesses and lanyards shall be set up with a minimal amount of slack between the person and the anchor point. Lanyards are to be attached to the D Ring of a harness.
- Lanyards must be fitted so that the wearer may not fall to a lower level without the fall being arrested. Lanyards shall have a shock absorber device when being used in a fall arrest system.
- Lanyards must not be used in conjunction with inertia reels and are not to be hooked together to allow greater coverage or movement



5.8.2 Retracting Inertia reel/lifeline (Type II/III Fall Arrest Device)

Inertia reels range in length from 1m to 10m and lock off when a fall occurs, some reels can work both horizontally and vertically.

Retractable inertia reels must be destroyed if a fall has occurred, where the shock absorber has been deployed, or where the lanyard has 'locked' up and does not run freely, or the fall indicator is visible.

A retractable inertia reel should lock off when tugged rapidly and retract smoothly, ensuring no slack occurs whilst rewinding.

Cuts, tears, abrasion or fraying, burns and chemical damage will all render a webbing inertia reel unserviceable.

The fall arrest device body shall be inspected for significant dents, distortion, corrosion, rust, obstructions, loose or missing screws, nuts and similar objects before use. Heavily soiled equipment prevents inspection visibility.

	<p>NOTE: Retractable inertia reels must be inspected by pulling the lanyard out fully and checking its total length</p>
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5.8.3 Shock Absorbing Lanyards

Lanyards used shall have a minimum tensile strength of 15 kN (1500 kg) and shall comply with AS/NZS 1891 Industrial Fall Arrest Systems and Devices.

Lanyards can be fixed or adjustable length lanyards (maximum of 2 metres) normally manufactured from rope or webbing, and include an in-line personal energy absorber, which limits the force to less than 6kN.

Energy absorber tear out stitching should not release below 2.0kN (200kg) so that the lanyard can be used to enable a person to be positioned and safely supported at a work location.

Pre use inspections are to be conducted and the following items are to be included.

<p>Nylon Components</p>	<ul style="list-style-type: none"> ID label present with date of manufacture – check expiry date Cuts and abrasion to rope or webbing; cuts and abrasion to stitching Glazing or crispiness – due to friction, heat damage or possible chemical contamination Damage due to contact with heat, corrosives, chemicals and solvents Discoloration - due to chemical contamination or prolonged UV exposure Excessive stiffness – due to overloading, possibly as the result of a fall
<p>Energy Absorbers</p>	<ul style="list-style-type: none"> ID label present with date of manufacture – check expiry date visual check of attachment points visual check of tear out element, checking for any signs of deployment



5.8.4 Harness Inspections (user)

A visual check shall be carried out daily before and after use. The inspection should include the following checks:

- Check all webbing for effects of cuts, tears, abrasion, heat, chemicals, corrosives or solvents, dirt and grease, hardening, excessive stretching, glazing due to friction, excessive wear or fuzziness, discoloration due to chemical contamination or prolonged ultraviolet exposure, deterioration due to rotting or mildew and excessive stiffness due to overloading, possibly as a result of a fall.
- Check all stitch blocks for broken, cut or worn stitching and damage due to heat, corrosives, solvents, or mildew.
- Check all buckles and D-rings for deformation, distortion, corrosion, wear and correct orientation.
- Check ID no and Standard Logo for legibility.
- Check attachment hardware for distortion, cracks, corrosion and ability to open/close freely.
- Check Date of Manufacture – shelf life shall not exceed ten (10) years.
- Check for evidence of a fall. Harnesses must be withdrawn from service after a fall and destroyed if any damage has been sustained.
- Any and all faults are to be recorded and the faulty equipment is to be placed out of service and tagged with an Out of Service Tag.



NOTE:

No fall arrest harness is permitted to be used at IGO Nova post ten years from date of manufacture.

5.8.5 Anchor Points

Anchors are points of attachment for safety lines or lanyards that secure the individual to the area where they are working and have the capability to support them in the event of a fall.

The method of attachment and the anchor point/s to be used during the activity **MUST** be confirmed prior to commencement. The anchor point must be suitable, 'fit for purpose', and **MUST** be compatible with the personal heights equipment being used so as to avoid any potential for damage or crush out situations occurring.

If any doubt exists as to the structural adequacy of the anchor point, an engineer shall make an assessment of the anchor point to ensure it meets the required standard for use.

Anchor Point Selection may depend on:

- The nature and location of the task.
- The type / characteristic of the anchor point construction or supporting structure.
- The method of fall protection to be achieved. (Fall Arrest/Restraint)
- Compatibility of connections and anchor points.
- Specific requirements of the equipment manufacturer.
- Ensuring adequate fall arrest clearance area for a person should a fall occur.
- Providing a safe means of access/egress to an anchor point for the person prior to connecting to and after disconnecting from the anchor point.



Anchor points or structures used as anchor points:

- Should be as close as practicable to vertical above the person to reduce the possibility of a swing (pendulum effect) occurring.
- MUST be capable of withstanding the shock loading forces encountered during fall arrest - 15KN for a single person anchorage or 21KN for two-person anchorage. The maximum number of persons at any one time permitted to be attached on a 21KN anchor point is two.
- MUST be capable of providing anchorage and adequate strength for the activity being performed. In some cases alternative methods of protecting workers working at heights will need to be developed based on the risk identified.
- Should be sound and free from sharp edges, burrs and other abrasive conditions. Protection of height safety equipment in use (e.g. synthetic slings or lanyards) against possible damage of this nature MUST be ensured at all times. Height safety equipment shall be set up in such a way so as to prevent the sling from slipping along the member to whom it is attached.
- Permanent anchor points shall be designed and constructed with the specific purpose of being an anchorage point and be included in a routine inspection schedule to ensure the integrity of all approved anchor points.

Fixed Anchor points:

- Manufactured anchor points may already be installed (e.g. tower legs or frames, Elevated Work Platforms) or may need to be installed specifically for the activity. In this case the anchor mechanism shall be of an approved and certified type to provide fall protection for the user.
- Initial installation of fixed anchor points (welded or bolted anchorage) must be inspected and approved by an engineer. Once approved for use, subsequent maintenance inspections may be completed by a dogman/rigger.
- Anchor points do not require quarterly tagging but must be registered on an Anchor Point Register.
- All anchor points must be visually inspected prior to use for damage, wear or signs of corrosion or cracking.
- If an anchorage is found to be impaired:
 - It shall be tagged out of service to indicate that it is not to be used.
 - The repaired anchorage shall not be used until it has been inspected and approved by a competent person.

Structural members may be used as fall arrest anchor points provided the following conditions are met:

- There are at least two structural bolts fastening each end of the structural member.
- Neither the structural member nor the fastening bolts are affected by corrosion or damage.
- A dogman or rigger has installed the sling onto the structural member and certified it for use as a fall arrest anchor point.



For purposes of assessing structural members for use as fall arrest anchor points, the following are not regarded as compliant structural members:

- Equal and Unequal Angles sections (conveyor stringers are approved for use)
- Pipe and instrument support brackets.
- Cable tray supports.
- Steel piping less than 150mm diameter.
- Cantilever beams.
- Handrails.
- Guarding.

5.8.6 Safety Nets

Safety nets shall meet the relevant Australian Standard -AS/NZS 1891 Industrial Fall Arrest Systems and Devices. They shall not be used to enter or exit a work area or as a working platform. If safety nets are used, then the following requirements shall be met:

- Safety nets are to be set up by a person with a minimum National High-Risk Rigging qualification.
- Safety nets are to be securely anchored before any work starts.
- Safety nets are to be rated strong enough to catch a falling person.
- Safety nets are to be hung as close as is practicable to the underside of the working area, but no more than two metres below the working area.
- Perimeter safety nets used where there is no edge protection must extend at least 2.5 metres beyond the leading edge of the working area.
- Safety nets must have sufficient tension and clearance to prevent a falling person contacting any surface or structure below the net.
- Material is not allowed to accumulate in suspended safety nets.
- Hot works such as welding or oxy cutting is not to be performed above safety nets.
- Safety nets are to be inspected, particularly after installation, relocation or repair.
- Safety nets are to be stored correctly in dry, shaded areas with good air circulation.
- Any net used should be checked for faults prior to use particularly UV damage.

5.8.7 Suspension Intolerance/Trauma

Controls for preventing suspension intolerance as a result of an arrested fall include:

- Persons working at heights shall never work alone when using a fall arrest harness and lanyard.
- The use of fall arrest harness stirrups to allow for leg movement in the event of an arrested fall.
- Where possible workers that are required to spend time hanging in a harness should use a sit type harness, which allows their legs to be kept horizontal.
- A task that includes the potential for an arrested fall is to have a documented and established rescue plan.



5.8.8 Fall Protection Equipment and Maintenance

Work positioning / fall arrest equipment shall be inspected by a person with a minimum National High-Risk Dogging qualification and tagged with the relevant quarterly test tag prior to issue / use and on a quarterly basis.

All height safety equipment and harnesses shall be inspected by qualified competent person/s at least once every three months or after any extended storage period. All height safety equipment and harnesses once inspected shall be tagged with the relevant quarterly test tag as having been inspected.

Tags must not interfere with the operation of the fall arrest system or create false attachment points due to location or design.

General cleaning is to be with lukewarm soapy water only.

All height safety equipment shall be maintained in departmental level registers and stored securely to prevent inadvertent damage or use by unauthorized personnel.

Records of inspection and service shall be maintained in a departmental register for each device and record:

- Manufacturers / suppliers details
- Batch or serial number
- Year of manufacture
- Date of purchase
- Date put into service
- Dates and details of inspections and maintenance.

Each device requires an identification label that records the last service / inspection date and the due date for the next service / inspection. The onsite quarterly tagging system that aligns with the electrical testing shall be used with a different coloured tag to denote each quarterly inspection period. It is referred to as RGBY, which represents the colours red, green, blue and yellow.

The quarterly inspection sequence is as follows.

December to February	Red
March to May	Green
June to August	Blue
September to November	Yellow

Height safety equipment should be stored in a cool dry place, ideally in properly designed cabinets that allow ventilation. Equipment should not be exposed to excessive heat, direct sunlight, high levels of humidity or come in contact with corrosives or other possible causes of damage.



5.8.9 Disposal of Fall Protection Equipment

Any defective equipment shall be deleted from the register and immediately destroyed in a manner that will not allow that piece of equipment to be reused. Under no circumstances shall a piece of equipment that is found to be defective or has failed an inspection, be allowed back into service or stored with compliant fall prevention equipment.

5.9 Elevated Work Platforms

In order for a person to control the work platform, scissor lift or man-lift (the basket), they must be trained, authorised, assessed for verification of competency (VOC) and be licensed in accordance with the WorkSafe requirements.

Where practical the authorised person must be in the basket unless it can be demonstrated that it is not possible.

Any person in the basket of an elevated work platform must be secured at all times with proper fall protection equipment and there must be systems in place to prevent tools and equipment from falling during operation and travel.

A Spotter must remain at all times with the EWP(s) while they are in operation (including initial ground mobilisation). Refer to section 5.9.3 Spotter requirements

An elevated work platform (EWP) is subject to plant and equipment site inspections and approval before first operation. Refer to classified plant standard NOV-MNT-STD-018 and Management of Classified Plant-Itinerant NOV-MNT-PRO-029

5.9.1 Boom Mounted EWP

Only authorised operators shall control elevated work platforms. The operator of the elevating work platform must be trained, competent, licensed and assessed for verification of competency (VOC) to operate that vehicle. Where a national High Risk Work Licence is required for boom mounted EWPs, the certificate must be current and presented for recording.

Fall arrest systems or restraint devices shall be worn at all times, compliant with AS 1891.4. They shall be used and attached to the anchorage point(s) for all boom type elevated work platforms as the potential for free fall exists if the bucket / man / basket inverts. Short lanyards or fall restraint devices may be used for heights of less than three metres. There must be a system in place to prevent tools and equipment from falling during operation and travel.

Whenever work is being done from a boom mounted EWP, a safety standby person will be present at ground level observing, and in direct communication with, the person(s) in the EWP bucket. The standby person will be a qualified authorised EWP operator.

5.9.2 Access and Egress from EWP

Operators shall not leave the confines of the platform edge protection unless the platform has been lowered to ground level. Personnel must not leave the raised bucket of a boom mounted EWP (except in an emergency) unless each of the following conditions is met:

- The person leaving the basket / platform at height is certified competent and authorised to work at height.
- Risk assessment identifies that the EWP access is safer than alternative means.
- Structural adequacy of the landing has been assessed and the landing is clear.



- Where the landing is at the edge of a structure, the maximum gap between the platform and the landing will not exceed 100mm.
- Access and egress will not take place unless a safety harness is properly worn and attached at all times to a suitable anchorage on the structure and basket; and
- The base controls of the EWP are tagged and isolated to indicate the equipment is in use.
- A Spotter is in place and controlling the immediate work area.

5.9.3 Spotter Requirements

Spotters are required to:

- Be familiar with the Operators Manual for the EWP they are spotting for.
- Be competency assessed (VOC) to operate each make and model of the EWP they are spotting.
- Be competent in the use of the ground controls of each EWP that they are spotting for.
- Be fully conversant in the identified emergency response rescue plan for the task.
- Remain at all times with the EWP(s) while they are in operation (including initial ground mobilisation).
- Not undertake any other duties, other than providing assistance to the EWP operators
- Ensure all personnel are kept out of the drop zone (the area directly below the basket) and the slew radius of the EWP they are spotting.
- Be observant of the movement of other vehicle /plant or pedestrians in the area and shall intervene where required to take action to prevent interaction.
- Ensure they maintain clear communication with the Operator, to indicate the area on the ground where the EWP is operating, or where the basket is to be lowered, is clear of obstructions.
- Maintain and move any barricading necessary, to ensure the safe movement of the EWP at ground level and for the safety of personnel working in the area
- Provide assistance to the EWP operator as practicable, to prevent incidents in accordance with established site safety requirements

5.9.4 Scissor Lifts

Scissor lifts have the advantage of being very compact, and as the only extension is vertical, scissor lifts are ideal in restricted space situations. The requirement for a harness is based on preventing a person being ejected or catapulted from the platform through a component failure or other eventuality.

Safety harnesses are not required to be worn on scissor lifts unless:

- The work requires the occupant to be leaning out or through the handrails.
- The scissor lift is not on a level concrete surface; and / or
- The scissor lift is travelling and not on a level concrete surface.

In any event where the risk assessment for the work identifies that the potential exists for a person to be ejected or fall from the platform, a safety harness will be worn and attached to the anchorage point on the platform. There must be a system in place to prevent tools and equipment from falling during operation and travel.



5.9.5 Safe Use of Work Platforms - Integrated Tool Carriers

Work platforms are designed to carry out tasks of short duration and occasional usage such as maintenance. These platforms shall be manufactured in accordance with AS 2359.1- Powered Industrial Trucks. No more than two people shall be in the platform at any one time. The mass of the platform and the safe working load shall be clearly marked on the platform. A suitable anchorage point shall be provided to facilitate the use of a fall restraint system.

All persons shall wear a full body harness, suitably attached using a fall restraint lanyard, at all times while in a work platform

Integrated Tool Carriers used to lift work platforms shall comply with the following requirements Where the elevating device is supported by hydraulics:

- A flow control device shall be provided to limit the lowering of a work platform to a maximum rate of 0.6 m/s in any situation which results from a failure of the hydraulic system.
- Rigid connection shall be used between the flow control device and the mast cylinder.

5.9.6 Crane Man Cage

The use of a crane man cage shall be limited to only those situations where it is necessary to elevate personnel to perform special tasks of short duration and where it has been assessed to be impractical to use scaffold or other plant that provides temporary access, such as an elevating work platform.

The use of a crane man cage shall be specifically designed and constructed to Australian Standard AS1418 part 17, Design and Construction of Workboxes and design registered. The control for its use is conducted under the Permit to Work system and operated in accordance with requirements of a developed and approved crane Man cage plan. Refer to Permit to Work – Nova-OHS- PRO-1310-00

The crane man cage is not to be used as a means to access and egress a workplace, instead of a properly designed system. Unless a documented risk assessment shows that this is safer than all other alternative means ,the structural adequacy of the landing area has been established and the landing area is clear, a JSEA or SWI must be developed and implemented for the operation.

Work boxes shall be;

- Designed to meet the appropriate Australian Standards.
- Built according to a prepared specification.
- Be marked with the mass of the box and the safe working load box.
- Not contain more than two (2) persons including a licenced dogman.

A crane used with a work box shall:

- Be fitted with a safety hook.
- Be equipped with a dead man control on power lowering to produce self-centring and automatic brake engagement.
- Be equipped with a lock-out control to prevent free fall of the work box and its contents.
- Lift only a work box and its contents when people are in the work box.



The operator of the crane shall:

- Always remain at the controls of the crane while any person occupies the work box.
- Always ensure that the work box and its contents are moved under powered conditions.
- Ensure that the safe working load for the crane (when the jib of the crane is at its maximum radius for the task to be performed), exceeds the total load of the work box and its contents.

Fall arrest systems or restraint devices shall be worn at all times. They shall be used and attached to the anchorage point as the potential for free fall exists if the man basket inverts. There must be a system in place to prevent tools and equipment from falling during operation and travel.

5.10 Working on Roofs

Where personnel are required to work on a roof, the roof shall be designed to withstand a minimum load as specified in AS 1170.1 Structural Design (unless specifically required otherwise).

Personnel going on to a roof for any purpose must have an SWP or JSEA approved by the area Superintendent or delegate

Where the work will involve transfer of additional loads onto a roof or structure (e.g. tools, equipment, plant etc.) the work shall be reviewed and authorised by a suitably qualified engineer.

5.11 Dropped and Falling Objects

Personnel working at heights must ensure that risks associated with falling objects are controlled by use of the following provisions:

- Implementation of a safe means to raise and lower plant, materials and debris in the place of work.
- Establish a drop zone by secure physical barriers (barricading / barriers) to prevent objects falling freely from buildings or structures in or in the vicinity of the place of work.
- Measures to arrest the fall of objects when unable to provide a secure physical barrier, such as lanyards / tool straps / tool bags.

5.12 Horizontal lifelines

Temporary horizontal lifelines provide fall protection when working at or near exposed edges for short durations, or one-off jobs. They are generally constructed from synthetic rope or heavy-duty webbing strap with some form of mechanical tensioning device.

- Horizontal lifelines either temporary or permanent shall be utilized by a maximum of two workers per lifeline.
- Each worker will be attached to the lifeline via a lanyard and pulley, thus eliminating the hazard of swing fall.
- Horizontal lifelines shall be erected by a person with a minimum Basic Rigging National high-risk licence.
- Tools and equipment shall not be suspended from the lifeline.



NOTE:

For regular and routine access protection, consideration of a permanent system constructed from steel wire rope should be installed.

5.13 Floor Grating Installation

Grating panels shall only be laid on the steelwork by personnel wearing appropriate fall prevention or protection gear.

All floor grating shall be secured immediately on placement with temporary floor grating clips or be lashed down with 2mm diameter (min) wire. The use of wire is a temporary measure and is not acceptable as a permanent fixing. No floor grating panels laid on to steelwork shall be left unsecured during breaks in the installation process which remove the installers from the area. Panels shall NOT be clipped to other grating panels, but only to structural steel.

Welds used on panels shall be a minimum of four (4) 25 mm long by 6 mm fillets using low hydrogen electrodes or a MIG Welder. Additional welds may be required on larger panels. Exceptions shall be approved on an individual basis by a qualified engineer.

Clipped grating panels shall have a minimum of one clip at each corner. Additional clips may be required in large sections of grating. Exceptions shall be approved on an individual basis by a qualified engineer.

Each grating panel shall be securely fixed to the structure and shall not rely on adjacent panels to prevent lateral movement.

All penetrations, slots, gaps and minor openings in floor grating shall be covered with fixed metal covers, or with scaffold planks securely lashed down, they shall be marked in clearly legible lettering no less than 75mm high:

**DO NOT REMOVE
OPEN HOLE BELOW**

All major openings shall have scaffold tube temporary handrails with mid rail erected around them, until the floor grating installation has been completed to required standards.

5.14 Floor Chequer Plate and Grid Mesh Removal

The person in charge of the work shall be responsible for obtaining approval from their Supervisor for the removal of floor grating prior to starting work. Such work shall be performed under a Grid Mesh Removal Plan, Work at Heights Plan, a Permit to Work and an approved JSEA/SWI.

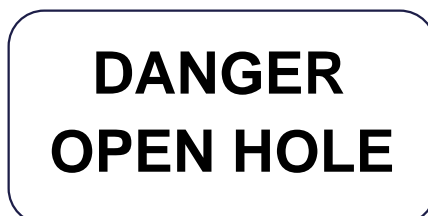
Refer to FRM-1310-0012 Grid Mesh-Barrier Removal Plan

After approval to remove floor grating has been obtained but before any floor grating is lifted, a suitable barricade shall be installed around the area to be lifted. This can include:



- Prefabricated handrails, or
- Scaffold tube with mid rails and kick boards (temporary kick rails shall be fitted if there is risk to personnel on lower levels).

Signage shall be fixed to the barricade stating:



Where the fall potential from the open hole to the next level qualifies as a work at heights activity, personnel engaged in the removal of floor grating inside the barricade shall wear a fall arrest harness and lanyard, which shall be attached to an approved anchor point at all times during the work.

All removed floor grating shall be immediately removed from the work area to a storage location or shall be stood on edge and securely lashed in place to avoid the creation of a trip hazard.

The barricade and signage around the removed floor grating area shall stay in place until the floor grating has been replaced and fastened with permanent fixings.

The area below where floor grating is to be installed or removed shall be barricaded and appropriately sign posted, to prevent entry or injury from falling items.

6. DEFINITIONS AND ABBREVIATIONS

TERM	DEFINITION
Anchor Points	A device or item by which a lanyard, static line or other line may be attached to a building or other structure, and includes the part of the building or structure to which the device or item is attached.
Competent Person	For the purposes of this procedure is one who through a combination of training, has successfully completed an approved work at heights qualification. (RIIWH204D Work safely at heights) and through experience has acquired knowledge and skills enabling that person to correctly perform Work at Height tasks.
Drop zone	An area underneath a location where overhead work is being performed into which objects from the overhead work location may fall.
Edge protection system	Guard railing of between 900 mm and 1100 mm high and a toe-board of not less than 100 mm high fitted at sides, edges and openings except at points of access from a stairway or ladder. There shall be no opening of more than 450 mm between guard railing (top-rail and mid-rail) and toe board and 10 mm between toe-board and platform deck.
Elevated work platform (EWP)	Telescoping device, scissors device, or articulated device, or any combination thereof used to position personnel, equipment and materials at work locations above or below the base support surface.
Fall-Arrest Devices	A self-locking device meeting the requirements of AS 1891.3 whose function is to arrest a fall (ie. type2/3 retractable lanyards)



TERM	DEFINITION
Fall-Arrest Harnesses	An assembly of interconnected shoulder and leg straps, with or without a body belt, designed for attachment to a lanyard, pole strap or fall-arrest device for fall-arrest or work positioning purposes.
Fall-Arrest System	An assembly of interconnected components comprising a harness (or belt in certain limited cases) connected to an anchorage point or system by means of a lanyard or pole strap, and whose purpose is to arrest a fall in accordance with the requirements of AS1891.4.
Fall Restraint Systems (individual travel restricting systems)	These systems are designed to prevent the user from moving into a fall hazard area and consist of: Anchor point, Lanyard, Harness and a Horizontal or vertical lifeline
Lanyard	Allows connection from the users harness to a anchor point or horizontal lifeline. Made of synthetic webbing, synthetic rope, or wire rope fitted with a shock absorber and connectors.
Personal energy shock absorber (or deceleration device)	A device which reduces the deceleration force imposed when a fall is suddenly arrested, and correspondingly reduces the loadings on the anchorage and the person's body. The energy absorber may either be a separate item or manufactured as part of the lanyard.
Safety Net	Means an industrial net, which is attached or supported from scaffold or directly to the structure framework of buildings, bridges or towers located below a work area to catch a person who has fallen. In these procedures, a safety net forms a fall-arrest system.
Floor Grating	Floor panels used for general access ways. Various other terms in general use such as "grid mesh" (a particular type of floor grating) and "grid flooring" may be considered to have the same meaning.
Working at Heights Rescue Plan	Means a plan for the prompt recovery of personnel in the event of a fall being arrested by the employed safety equipment. The rescue support should be available to avoid long periods of fall arrest suspension.

7. ACCOUNTABILITIES

ROLE	RESPONSIBILITY
General Manager	<ul style="list-style-type: none"> Ensure adequate processes are established to communicate relevant information with internal and external stakeholders. Ensure adequate resources are provided to meet the requirements of this procedure.
Departmental Managers	<ul style="list-style-type: none"> Ensure adequate processes are established to communicate relevant information with internal stakeholders. Ensure adequate resources are provided to meet the departments' requirements of this procedure. Ensure compliance with the requirements of this procedure is maintained within the department.
Area Superintendents and/or Seniors	<ul style="list-style-type: none"> Ensure adequate resources are provided to meet the departments' requirements of this procedure. Ensure compliance with the requirements of this procedure is maintained within the department.
Area Supervisors	<ul style="list-style-type: none"> Ensure compliance with the requirements of this procedure is maintained within the department.



ROLE	RESPONSIBILITY
IGO Personnel and / or Contractors and / or Sub-contractors	<ul style="list-style-type: none"> • Ensure compliance with the requirements of this Procedure / Guideline.

8. REFERENCES AND RELATED DOCUMENTATION

LEGISLATION AND REGULATIONS	
ACTS	<ul style="list-style-type: none"> • <i>Western Australia Mining Safety Inspection Act 1995</i> • <i>Western Australia Occupational Safety and Health Act. 1984.</i>
Regulations	<ul style="list-style-type: none"> • Western Australia Mining Safety Inspection Regulations 1994 • Western Australia Occupational Safety and Health Regulations. 1996.
STANDARDS, CODES OF PRACTICE AND INDUSTRY GUIDELINES	
Internal	<ul style="list-style-type: none"> • IGO Group Safety Standard 14_ Defined Hazardous Work and Permit to Work • IGO Group Safety Standard 06. Crane and Lifting Operations • PRO-1310-00 Permit to Work • FRM-1310-0000 Permit to Work • NOV-HSE-08-PRO-002_Dropped and Falling Objects • FRM-1310-0007 Confined Space Entry Plan • NOV-HSE-08-FRM-001_Crane Work Box Plan • FRM-1310-0012 Grid Mesh-Barrier Removal Plan • NOV-MNT-SWP-009 Use of Elevated Work Platform (EWP) • PRO-1308-11 Safety Barricades, Barriers and Signs • NOV-ELE-PRO-004 - High Voltage Vicinity Permit Procedure • NOV-ELE-PRO-005 - High Voltage Electrical Access Permit Procedure • JSEA Template
External	<ul style="list-style-type: none"> • AS 2424 Plastics Building Sheets - General Installation Requirements and Design of Roofing Systems • AS/NZ 1891 - Industrial Fall Arrest Systems and Devices. • AS/NZ 1891.1 - Industrial Safety Belts and Harnesses. • AS/NZ 1891.2 - Horizontal Lifelines and Rail Systems (Interim Standard). • AS/NZ 1891.3 - Fall Arrest Devices. • AS/NZ 1891.4 - Industrial Fall Arrest Systems & Devices – Selection Use & Maintenance. • AS/NZ 1576.1 - Scaffolding – General requirements. • AS/NZ 1576.2 - Scaffolding – Couplers and Accessories. • AS/NZ 1576.3 - Scaffolding – Prefabricated, Tube and Coupler Scaffolding. • AS/NZ 1576.4 - Scaffolding – Suspended Scaffolding. • AS/NZ 1657 - Fixed Platforms, Walkways, Stairways & Ladders Design, Construction and Installation. • AS/NZ 2550:10 - Cranes Safe Use – Elevated Work Platform



	<ul style="list-style-type: none">• AS 4142.3 Static Life Rescue Line• AS 4488.1 Industrial rope access systems - Specifications• AS 4488.2 Industrial rope access systems – Selection, use and maintenance• Safe Work Australia Code of Practice Managing the Risk of Falls at Workplaces 2011
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9. REVISION TRACKING HISTORY

VERSION	PAGE	SECTION	DESCRIPTION OF CHANGE
<i>e.g. 1.0</i>	<i>2</i>	<i>1.1.5</i>	<i>Description of change here</i>