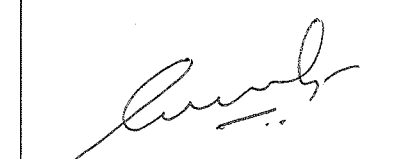
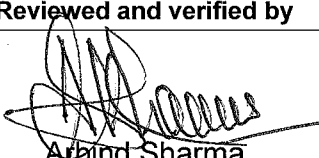
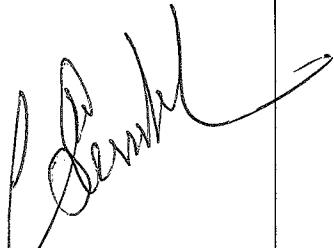
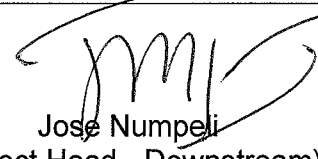
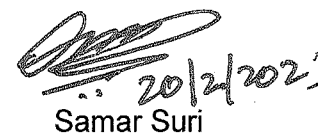


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TECHNICAL STANDARD (TS)

WORKING AT HEIGHT SAFETY

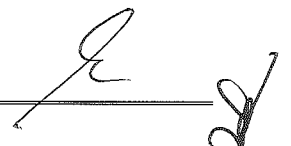
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Document Change Note

Rev. No	Rev. Date	Comments / Changes
00	07-11-2022	New Issue



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1. PURPOSE

One of the most common causes of serious injury and fatality at work is a fall from height. Therefore, working at height is one of the AMNS Golden Rules for Safety, and there is zero tolerance for violation of the working at height safety rules.

This procedure outlines the AMNS requirements for reducing the likelihood of falls while working at heights greater than 1.8 Meters. Typically, it is mandatory to apply the hierarchy of controls for working at height when there is a risk of falling 1.8m or more. However, it should be recognised that there is a potential for injury from falls of less than 1.8m.

2. SCOPE

This procedure shall apply to all AMNS project sites and related work areas including contractors to meet -

- Legal and regulatory requirements
- AMNS HSE Requirements
- ISO 45001 and ISO 14001 standard requirements
- AMNS HSE Policy

3. DEFINITIONS AND ABBREVIATIONS

3.1 DEFINITIONS

Anchorage: A secure point of attachment may or may not part of the work structure, to which lifelines, drop lines, or lanyards are affixed. An anchorage must be capable of supporting a minimum impact force of 24kN (approximately 2500 kg) for every person attached to it.

Competent Person: A person who has, in respect of the work or task to be performed, the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task.

Continuous Tie-Off: The requirement that a person be tied off at all times when working or moving from one place to another place where the potential for falls exists.

Double Lanyard: A system utilizing two lanyards connected in a "Y" configuration, which allows person to maintain continuous tie off while working or moving from one anchor to another anchor point, thus providing protection from falls at all times. Refer to EN 354:2010

Double Action Locking Snap Hook: A device for securing lanyards that requires two separate locking pins be depressed before the snap will open.

Edge protection: It is the use of guard rails or other barricades to prevent a person from falling from unprotected edge or holes. These barricades are placed near an edge where a fall-hazard can occur, or to surround a hole or weak surface (such as a skylight on a roof) which may break when stepped on.

Fall Prevention systems: Fall prevention is anything that eliminates a fall hazard altogether. This can be done by limiting access to fall hazards through edge protection or a fall restraint system.

Fall Restraint System: Fall restraint systems prevent the user from falling any distance, by not allowing the worker to reach any unprotected side or edge. Fall restraint systems utilize single point anchors, horizontal lifelines with rope grabs and limiting length lanyards, allowing workers to perform tasks at heights without going over the edge from where person can fall.

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Fall Protection: Any equipment, device or system used to provide protection from falling or to safely arrest a fall if one occurs.

Floor Opening: An opening measuring 30.5 centimetres (12 inches) or more in its least dimension, in any floor, platform, pavement, or yard through which persons may fall, such as a hatchway, stair or ladder opening, pit, or large manhole.

Full Body Harness: A full body harness is a body holding device used to protect workers from falls by distributing the force of the fall over a large area of the body, ensuring that the subject of the fall remains suspended in an upright position after the fall has occurred (chest, waist and thighs). Refer IS 3521: 1999, EN 361: 2002

Guardrail: A barrier secured to uprights and erected along the exposed sides and ends of platforms to prevent falls.

Leading Edge: Advancing edge of a floor, roof or formwork which changes location as additional floor, roof or formwork sections are placed, formed, or constructed. Leading edges not actively under construction are considered to be unprotected sides/ edges.

Lanyard: A nylon rope/web belt, attached to a full body safety harness, suitable for supporting one employee.

Lifeline: A flexible cable, either horizontal or vertical, which is anchored at both ends and to which other personal fall protection devices can be attached and which meets the minimum load specifications to withstand 24KN of force per man supported.

Personal Fall Arrest System (PFAS): Means the use of multiple, approved safety equipment components such as; body harnesses, double lanyards, deceleration devices, droplines, horizontal and/or vertical lifelines and anchorages, interconnected and rigged as to arrest a free fall.

Fall restraint system: An approved device and any necessary components that function together to restrain an employee in such a manner as to prevent that employee from falling to a lower level. This equipment includes standard guardrails, warning line system, warning line and monitor system, or approved safety harnesses) and lanyards attached to secure anchorage points.

Retractable Fall Arrestor: A retractable fall-arrest device used in conjunction with other components of a fall-arrest system. A retractable lifeline should be used by only one person at a time. Refer to EN 360:2002

Retractable Lifeline or Inertia Reel - A fall-arrest device that allows free travel, without slack rope, but locks instantly when a fall begins. Retractable lifelines may be used, but horizontal movement must be limited.

Rope Grab: These are automatic lifeline devices which act by inertia to grab the vertical lifeline should a fall occur. Rope grabs are used when vertical movement is required such as moving up or down vertical ladder, works from suspended scaffolds. Refer: EN 353 1-2: 2002

Suspension Trauma: A form of ill health that results when an individual is suspended in a relatively immobile position for an extended period of time. It is an exacerbating danger faced by workers who fall from height and are left suspended from a fall-arrest system until rescued.

Suspension Trauma Straps: A safety strap designed to help a worker overcome the potential negative health impacts of suspension trauma. They are coiled up in pouches and attached to the fall harness at the hips.

Safety Net: A net to protect people from injury after falling from heights by limiting the distance they fall, and deflecting to dissipate the impact energy. Refer to BS EN 1263: 1&2, IS 11057:1984

Safe work platforms: A metallic surface, with toe board and guard rails, from which work can be carried out, or as a means of access to or egress from a place of work.

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Shock Absorber: Energy absorbing devices attached to safety harness, which expands when a fall occurs significantly reducing the impact of the fall. Refer to EN 355:2002

Static Line or Catenary Line - A cable or rope strung horizontally and/or vertically from one substantial object to another, providing a means of traveling between those two objects while maintaining fall protection between those objects.

Working at heights: Any place from which a person could fall from one level to another level and it is reasonably likely that the person would be injured due to the distance of the fall

Work at height, includes -

- in or on an elevated workplace from where a person could fall;
- in the vicinity of an opening through which a person could fall;
- in the vicinity of an edge over which a person could fall;

Vertigo or Acrophobia Testing: A medical test done on workmen engaged in height work.

3.2 ABBREVIATIONS

HSE	: Health Safety and Environment
PFAS	: Personal Fall Arrest System
PPE	: Personal Protective Equipment
TBT	: Toolbox Talk
TS	: Technical Standard
MEWP	: Mobile Elevated Work Platform
T&T	: Tools & tackles

4. ROLES & RESPONSIBILITIES

The Project Head and the Site Engineer are responsible for ensuring that the project is in compliance with the general requirements and those given in this procedure.

The Project HSE Manager and the Site HSE Representatives are responsible for ensuring that all height workmen are trained and authorized.

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5. WORKING AT HEIGHT - SAFETY ASSURANCE PROCESS

5.1. HAZARDS:

The hazards associated with working at height are:

- Fall of person from height
- Falling objects from height
- Overturning/ toppling of mobile elevated work platform (Manlift/ scissor lift)
- Collapse of scaffold
- Nip/ pinch point (Including caught between cage and stationery structure)

5.2. GENERAL REQUIREMENTS:

Working at height poses a great deal of hazard at any construction site. Control measures shall be installed and maintained for selection of right means of access to height and competency of personnel.

SELECT	The correct type of access / work platform / fall prevention or protection system
CHECK	The location of work
	The condition of the means for access (Ex. Scaffold, ladder) and work platform (Ex. MEWP / man basket)
	The working conditions while in use
	Surroundings where such task is being carried out
USE	For intended purpose and capacity only
	Adopt correct practices

Adverse Weather conditions

Depending on the severity line management should decide suspension of working at height under adverse weather conditions such as heavy rains, high winds, lightening etc.

Working at Height during night

Additional HIRA assessment shall be conducted for work at height during night. Risk assessment should focus on proper illumination of the area, including access/ egress and back-up arrangement.

Refer Night work procedure & Illumination checklist for the night works.

Choosing personnel for working at height

The following workers should be excluded from work at height:

- Workers who suffer from vertigo or who are afraid of heights
- Anyone who is not physically fit enough to climb
- Anyone with a health condition which may cause dizziness (consider the effects of fasting, medication as well as the extreme summer conditions)
- Workers whose physical shape or weight prevents them from working safely at height
- Worker more 50 years of age

Permit To Work (PTW)

All tasks carried out at height more than 1.8 meters shall be under PTW system

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5.3. FALL PREVENTION / PROTECTION SYSTEM:

5.3.1 Scaffold:

- Scaffold can be used both for access and as a work platform.
- Engage trained and authorized personnel only to use/ work on scaffolds
- Ensure that SCAFFOLDING-TAG is showing "scaffold is safe to use". Employees are prohibited from using untagged scaffolds.
- Scaffolds shall be visually inspected. Deficiencies shall be reported to supervisor and get it rectified prior to use
- Ensure approved full body harness, lanyard with impact absorber is available for each person involved and ensure they are trained to wear/ use it correctly
- Ensure that the fall arrest (Safety Harness) is used all the time while on scaffold.
- Always use only the access specifically provided for the given scaffold
- Prohibit scaffold use during storms and high winds
- Any mud or slippery conditions shall be corrected or resolved before use of the scaffold.
- Remove debris and unnecessary materials from scaffold platforms time to time to avoid over loading and to prevent tripping hazards.
- Be certain that scaffolds and components are not loaded beyond their rated and maximum capacities.
- Maintain a safe distance from energized power lines (Minimum 3 feet from insulated cables carrying <300V and 10 feet from insulated cables carrying >300V)
- For specific details on the technical standards of scaffold safety refer - AMNS/Project/TS/HSEM/03

5.3.2 Guardrail System:

- Guardrail systems will be provided as the primary fall prevention system for walking/working surfaces, unless the use of a guardrail system is infeasible. fall protection must be worn.
- Work areas that have open sided floors, exposed leading edges, floor openings, platforms, or runways that present a fall hazard of 1.2 meters (4 feet) or more to a lower level will be protected by a guardrail system. If a guardrail system is infeasible, fall protection is worn.
- Guardrail systems must block access to any fall hazard along the guardrail system except at ladders and stairs (a swing gate will be placed across a ladder opening unless the opening is barricaded or offset).
- Guard rail is a stationary, fixed fall protection system designed to prevent workers from stepping over the edge of a walking-working surface.
- Top rail (handrail) must be minimum 1050 mm from the working surface and should withstand the lateral force of 200 Pound (90 Kgs),
- Mid rails must be located at 525 mm (midway) between the top rail and the working surface and should withstand the lateral force of 150 Pound (68Kgs) and
- Toe boards will be provided to prevent persons /material falling off the working surface and must be a minimum of 150 mm in vertical height and should be capable to withstand the force of 50 Pound (22 Kgs)

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5.3.3. Permanent Fixed Platform / Walkway:

- A permanently engineered standard platform with handrails attached to a permanent structure (such as a work platform or access way) may be used.
- Openings in the guardrail system of a permanent Fixed Platform / Walkway require exposed employees (within 1.8 meters (6 feet) to use PFAS.

5.3.4. Ladders:

- Ladder to be used only for access. The user shall always maintain three-point-contact.
- The design of ladder shall confirm to IS 3696 (Part 2): 1991.
- Metal ladder shall be either of steel complying with IS-1977:1975, or of aluminium alloy complying with the suitable grade of IS 617:1975.
- All ladders shall be designed to carry their intended load safely.
- Side rails (Stiles) of metal ladders shall be of sufficient cross-section to prevent excessive deflection in use.
- Slip-resistant shoes, lashing or other effective means shall be used to avoid danger of slipping.
- Makeshift ladders shall not be permitted.
- Working from ladders is prohibited (as no 3 point contact can be established)
- Ensure only color-coded ladder is selected.

Inspect ladder before mounting:

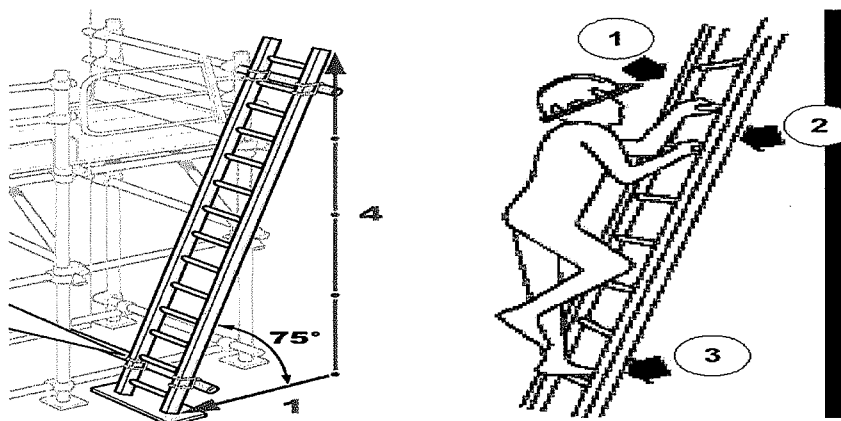
- Loose steps or rungs
- Loose nails, screws, bolts, or other metal parts
- Cracked, split or broken uprights, braces, steps or rungs
- Splinters on uprights, rungs or steps
- Damaged or worn non slip bases

If it's an extension ladder, also look out for:

- Defective lock - that do not sit properly when the ladder is extended
- Loose, broken, or missing extension locks
- Deterioration of rope
- Base of the ladder should be with anti-slip pads and shall be secured near the top where ever possible
- Rising at least 1 meter beyond the landing place or that there is a proper hand hold to dismount
- No ladder shall be placed against windowpanes, sashes or such other unsafe or yielding objects, nor placed in front of doors opening towards it.
- When ascending or descending, the user shall face the ladder, use both his hands, and place his feet near the ends of the rungs rather than near the middle.
- Hand tool and objects shall not be carried in hands while climbing up or down.

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- Ladders made of metal / conductive materials shall not be used in the vicinity of overhead electrical lines.
- Ladders shall not be used as guys, braces, or skids or for any other purpose for which they are not intended. They shall not be used in horizontal position as runways or crossover.
- Ladders shall not be spliced to increase the height.



Pre-erection Requirements:

- Review the requirements (Area, nature of work activities around the area, provision for placing ladder, etc.) to determine the type and size of ladder to be used
- Make sure that the ladder is inspected prior to use
- Assess needed fall protection
- Duration and kind of work tasks to be performed
- Hazards (Electrical power lines, people movement, vehicle movement,)
- Weather and environmental condition

5.3.5 Mobile Elevated Work Platform (MEWP)

- Engage trained and authorized personnel only to use/ work on MEWP
- Operate the MMEWP as per the manufacturer's instructions.
- Ensure the SWL is not exceeded. Number of personnel in the basket should never exceed the rated capacity/ OEM recommendation.
- When working on machinery or using tools, make sure that any extra pressure that may be applied, does not compromise the SWL or tools / other items placed in the MEWP. Do not exceed the SWL of the MEWP.
- Monitor ground conditions at all times in case they may change.
- Conduct Toolbox talk with MEWP operator, signal man and crew intended to use MEWP prior to lift covering topics like the location of work, nature of work, communication.
- Hazard of falling objects to people down the work area shall be assessed and precautions shall be taken in the form of barricades/ restricted areas.

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- Use pouch/ tool bag/ waist bag to carry hand tools. Ensure hand tools are secured / lashed while working at height.
- Ensure approved full body harness, lanyard with impact absorber is available and is trained to wear/ use it correctly by hooking to the top railing of the basket
- Never over lean on sides of man basket to reach far ends.
- Never come out of the basket by jumping over the railing and the person can enter or exit by opening the gate only.
- Never stand on railing to gain extra height.
- Prohibit use of MEWP during storms and high winds (Winds >25 KMPH)
- Communication shall be established between personnel in the basket and the operator on ground either by radio/ walkie-Talkie and signalman in case where the operator on ground could not see the basket. In such cases, ground level controls also transferred to panel in the basket. The supervisor shall ensure these controls when the basket is not visible by the operator on ground.
- Don't use a MEWP on sloping ground (more than 5 degrees incline)
- Always keep the booms in retracted position while parking
- No component of the personnel carrier should be altered at site
- For specific details on the Standard Operating Procedure of MEWP refer - AMNS/ Project/ SOP/ HSEM/01

5.3.6. Man basket (Lifted by Crane):

- The design of the man basket should be such that it prevents a person using it being crushed, trapped, or struck or fall from the carrier.
- Ensure only certified and color coded man-basket is selected.

Inspect man basket before using –

- Cracks/ loose bolts at joints
- Platform with toe boards and non-slip surface (Checkered plate/ Grated)
- Guard rails at least 38 inches high
- All 4 slinging anchors are in proper shape (No bends/ dents/ cracks)
- Provision to carry tools/ materials for intended task
- Operate within SWL

Pre-erection Requirements:

- Make sure that the slings/ shackles are inspected, color coded and of same capacity and type of hook to man basket
- Mobile crane / Crawler crane is parked with outriggers extended, on stable ground/ padded
- Assess needed fall protection
- Assess need for standby person/ Signal Man
- Length and kind of work tasks to be performed

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- Hazards (Electrical power lines, people movement, vehicle movement,)
- Weather and environmental conditions

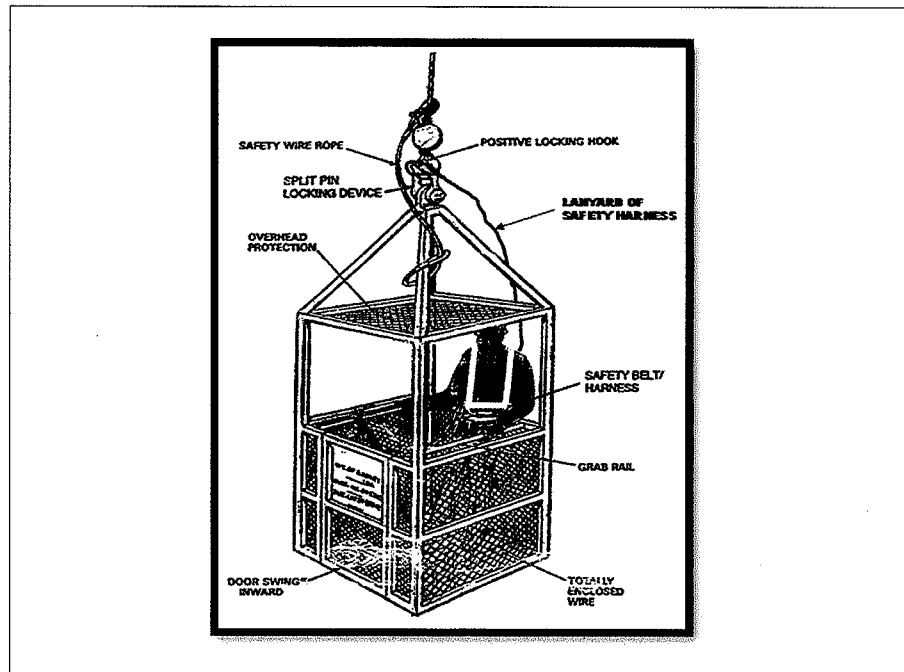
Using Man Basket:

- Use Crane which is inspected and approved for lifting man basket
- Ensure that the crane operator is competent to handle man basket
- Ensure that the crane main hook is having safety latch
- Ensure that all the slings are of equal length so that the basket will be stable when it is lifted
- Conduct Toolbox talk with crane operator, signal man and crew intended to use man basket prior to lifting the man basket by crane covering topics like the location of work, nature of work, communication etc.
- Crane operator shall be made aware of swinging man basket and competent to control swings
- Ensure approved full body harness, lanyard with shock absorber is available and is trained to wear/ use it correctly.
- Hazard of falling objects to people down the work area shall be assessed and precautions shall be taken in the form of barricades
- Prohibit use of man basket during storms and high winds.
- Use pouch/ tool bag/ waist bag to carry hand tools.
- Never over lean on sides of man basket to reach far ends. Ensure centre of your main body always in line with man basket.
- Move the personnel platform slowly and cautiously without any sudden jerking of the crane, derrick, or platform.
- Have all brakes and locking devices on the crane or derrick set when the occupied personnel platform is in a stationary working position.
- The combined weight of the loaded personnel platform and its rigging must not exceed 50 percent of the rated capacity of the crane for the radius and configuration of the crane.
- All man baskets shall be inspected and certified by third party.
- All man baskets shall have a unique ID no., SWL, inspection date & due date shall be displayed prominently.
- All the lifting tools & tackles used for the man basket have a valid third-party test certificate and respective colour code.
- Overloading in basket is not allowed. Follow the instructions displayed on the basket as per the recommendation of competent person.
- Separate sling must be provided from the crane hook for anchoring the safety harness.
- Ensure the continuous hooking of safety harness in the sling while working in man basket.
- Provide Tagline to guide the basket at higher elevation.



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- The man basket lifting operation must be carried out under the supervision of experienced rigger foreman. Man basket shall be inspected by competent person once in six months
- During inclement weather Crane suspended man-cage shall not be used (if wind speed >32Km/hr lifting shall not be performed)



5.3.7. Safety nets:

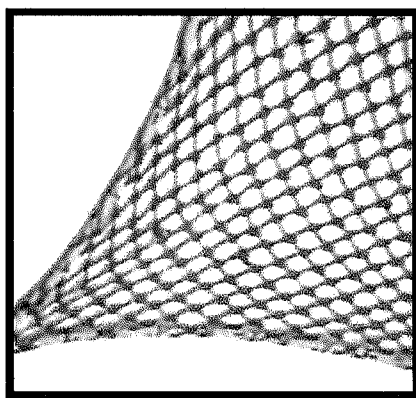
- Safety nets are used where there are floor/roof openings.
- All safety net systems shall meet the requirements of Indian Standard (IS: 11057-1984) or other applicable mandatory standards.
- Safety net mesh openings shall have a maximum size of 10 cm x 10 cm and be secured at each crossing to prevent elongation of the opening.
- Safety net shall also have Overlay Containment Net, to hold falling tools / materials.
- A continuous length of net having no joints, shall be used to cover the span between supports.
- Safety nets shall be installed as close as possible to the working level (with sufficient clearance to prevent contact with the surface below if someone falls into them) but in no case more than 6 meters below the working level.
- Safety nets shall be installed along the length of the building to cover each roofing bay.
- Material, equipment, and other items that fall into the net are to be promptly removed.
- Safety nets are to be inspected before use and then daily for wear or damage caused by falling materials.
- Before starting roof work, the perimeter nets shall also be in position.
- Safety net shall be of fire retardant material.

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Inspection and care of nets:

- All the safety nets shall be preserved as per the manufacturer's instructions. Manufactures certificate shall be made available at site.
- Nets shall daily be inspected for cuts and damage from abrasions, chemicals, or heat.
- Nets shall be stored in dry, shaded areas with good air circulation.
- Accumulation of combustible materials in suspended nets shall be prevented.
- While welding or oxy cutting is being performed, nets shall be examined to ensure that the welding slag has not caused any damage.



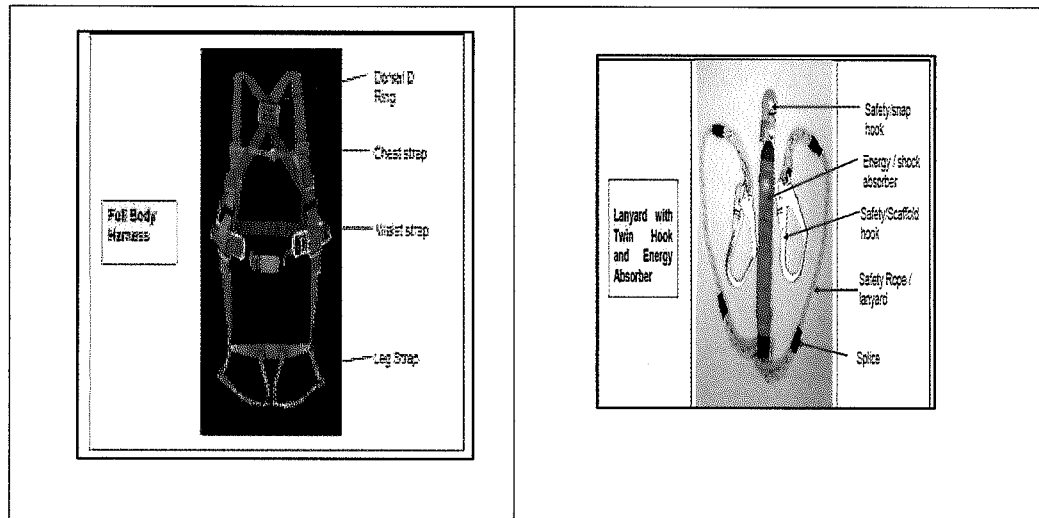
5.3.8. Personal Fall Arrest Systems (PFAS) –

(Full Body Safety Harness with Double Lanyard and Shock Absorber)

- Full body safety harness must confirm to the standard IS 3521: 1999., EN 361: 2002.
- Fall arrestor system is full body harness with double lanyard of 1.8 M length each, out of which, one has to go to the fixed anchorage and another one for movement. So, at any given point of time, one of the lanyards is always tied-off providing tie-off 100% of the time.
- Safety harness and lanyard assemblies must be capable of withstanding a tensile loading of 15KN force without cracking, breaking, or taking a permanent deformation.
- A snap hook will only be attached to another connector that is part of the PFAS; do not hook the connector back onto the lanyard unless the lanyard is approved for that application.
- Maximum length of a lanyard assembly shall not exceed 1.8 meters in length, and it must be equipped with self-locking hooks on each end.
- The lanyard must be equipped with shock absorber.
- Each harness and lanyard must have a label that displays the manufacturing date. If the date is more than 5 years from the current date, the harness or lanyard must be destroyed and a new one obtained.
- Anchorage points shall be high enough (preferably above shoulder height) to prevent personnel from free falling more than 1.8 m (6 ft) or striking any lower level during a fall.
- Snap hooks must be of a double-locking to prevent accidental disengagement.

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- The lanyard must not be dragged.
- Knots must not be tied in a lanyard. This will reduce the strength of the lanyard.

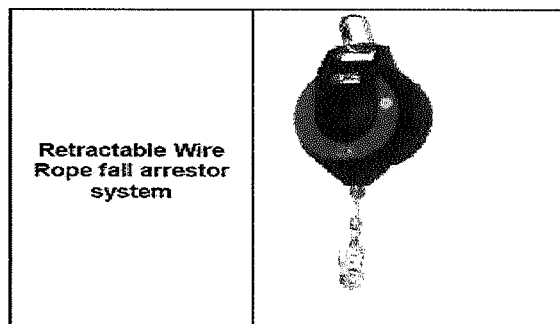


5.3.9 Personal Fall Arrest Systems (PFAS) (Self Retractable Fall Arrestor)

- A retractable fall arrestor, will automatically stop a person's descent a short distance after the onset of an accidental fall.
- A retractable lifeline is a fall-arresting device used in conjunction with other components of a fall-arrest system. A retractable lifeline should be used by only one (1) person at a time.
- Retractable lifelines should be considered for use when working in areas such as roofs and scaffolds, tanks, towers, vessels, and manholes. Also, retractable lifelines should be considered when climbing such equipment as vertical fixed ladders and telescoping derricks.

Other considerations include:

- Self-retracting lifelines must be attached directly to the dorsal D ring of the harness. Never attach a self-retracting lifeline to a lanyard
- Do not use fibre rope for anchorage point.
- Attach self-retracting devices to anchorage points using shackles or carabiner.
- Equipment must be hung by the anchorage point or placed loosely in a clean, dry area when storing.



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5.3.10 Personal Fall Arrest Systems (PFAS)

(Rope Grab)

The rope grab must be used with a rope that meets or exceeds the following:

- Rope grab size must match rope size.
- Individual grab arrestor should be provided for employees.
- Minimum diameter of 1.6 cm (5/8 inch) rope.
- Polyamide rope should be used.
- Minimum tensile strength of 2268 kilograms (5,000 pounds).
- When rope grabs are used with wire rope, it must be a complete system. (Rope grab must be designed for a specific type and size of wire rope.)

5.3.11 PERSONAL FALL ARREST SYSTEMS (PFAS)

(Horizontal and Vertical Lifeline)

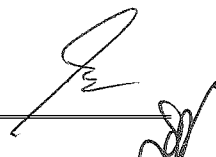
The following guidelines should also be followed:

- Horizontal lifelines must be installed and used according to manufacturer's specifications.
- Softeners must be used where lifelines contact sharp edges such as beam flanges.
- Horizontal lifelines must be capable of performing as the anchorage point for each employee attached to the life line. [i.e. - If three (3) employees are each using the same horizontal lifeline; the lifeline must be capable of supporting all three (3) employees during a fall. (3 * 2268kilograms plus a safety factor of 2 – OSHA Standard)]
- A vertical lifeline will be used by only one (1) employee at a time.
- Vertical lifelines must be anchored independently from scaffolding anchor points.
- Vertical lifeline anchor points, connectors, and other system components must be capable of safely supporting 1 employee falling 1.8 meters (6 feet).

5.3.12. PERSONAL FALL ARREST SYSTEMS (PFAS)

(Anchorage)

- Anchor points for lanyards/harnesses, horizontal and vertical lifelines must meet the following:
- Be able to safely support 1 person falling 1.8 meters (6 feet).
- Be installed in a manner that prevents accidental disengagement from support structures.
- Be inspected by a Competent Person on a periodic basis.
- Be placed where attachment and detachment can be done without causing loss of balance.
- Be placed above shoulder height to reduce fall distance.
- Be free of sharp edges to avoid cutting the lanyard.



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- Anchorages for fall arrest is designed to withstand force of 22.3 kN per employee (Anchorages is designed for fall restraint to withstand a tensile force of 4 times the intended load i.e. weight of workman plus tools).
- Do not make the anchorage part of the work surface; locate it to start arresting the fall before 1.8 meters (6 feet) and to prevent falling or swinging into other structural members or equipment.

Note: The potential for injury is minimized when an anchorage point is selected for the shortest free-fall distance possible, limit free fall to less than 0.6 meters (2 feet) when feasible.

5.4 PROTECTION FROM FALLING OBJECTS

- Simultaneous activities should be identified. Employees working below another work area must inform the employees above of their presence.
- Should tools and equipment be raised or lowered to the upper work area, this work will be performed by crane or be raised and lowered by hand using a rope (minimum 1.6 cm diameter) with the tools and equipment securely tied. These lifting areas will be barricaded to prevent unintentional access beneath the suspended load.
- Employees will be protected from objects falling from overhead work by wearing hard hats and using one of the following measures:
 - Barricade off the area.
 - Use toe-board, screens, or mesh on the guardrail system to keep small or unstable materials from falling to the lower work surface.
 - Erect a canopy/safety net over the hazard area that is capable of withstanding the force of any material that might fall, and set material back from the edge.
 - Keep tools and equipment secured or in buckets/pouches.
 - Supervisor's role to prevent conflicting activities.

5.5 SPECIFIC REQUIREMENTS

5.4.1 Structure erection/ working on structures

- Fall protection is required whenever working in an elevated work area 1.8M higher above the floor, where handrails do not exist.
- Double lanyards should be used to provide continuous tie-off while movement.
- Lanyard length should be kept as short as practical to limit the potential fall distance. This is accomplished by utilizing a tie-off point overhead and not below the waistline.
- Suitable life line should be provided.

5.4.2. Pipe racks and cable trays

- While working in pipe racks, cable trays etc; safety harness must be worn and should follow continuous tie off.

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- "Walking over pipes" is not permitted. For movement over pipes cross over bridges shall be provided.
- No one shall climb on cable trays and shall use anchor points/lifeline independent of the cable tray.
- Cable tray shall not be used for taking anchor support for safety harness.
- Cable tray shall not be used as a ladder.

5.4.3. Working on Roof / Top Roofs:

- Employees engaged in roofing activities, with unprotected sides and edges 1.8 meters (6 feet) or more above lower levels or where "fall through" hazards exist will be protected by fall protection systems.
- For high-pitched roofs (slope of more than 4 in 12) that have unprotected edges, employees will be protected by either a guardrail system or PFAS.
- When performing roofing work on low-pitched roofs (slope of 4 in 12 or less), employees working within 1.8 meters (6 feet) of an unprotected edge are protected by a guardrail system, combination of a warning line with a safety monitor, or PFAS.
- All work on roofs is highly dangerous, even if a job only takes a few minutes. Proper precautions are needed to control the risk. Those carrying out the work must be trained, competent and instructed in use of the precautions required. A 'method statement' is the common way to help manage work on roofs and communicate the precautions to those involved. On AMNS premises contractors should work closely with the client and agree arrangements for managing the work.
- Safe access to a roof requires careful planning, particularly where work progresses along the roof.
- Typical methods to access roofs are:
 - ❖ general access scaffolds;
 - ❖ stair towers;
 - ❖ fixed or mobile scaffold towers;
 - ❖ mobile access equipment;
 - ❖ ladders; and
 - ❖ roof access hatches.
- Always follow a safe system of work using a platform beneath the roof where possible. Work on or near fragile roof surfaces requires a combination of staging, guard rails, fall restraint, fall arrest and safety nets slung beneath and close to the roof.

5.4.4. Floor Opening:

- Floor openings pose a significant risk to employees and require action that removes the potential hazard. You must take action by; installing adequate signage and hard barricade around the floor opening or closing the floor opening.
- If employees are required to work within 6 feet of a unprotected floor end or floor opening; employees must wear fall protection to prevent an employee from the possibility of falling through the opening.
- Hard barriers or covers shall be provided when an opening is created.
- Only authorized personnel shall be permitted to remove the barricading or hole covers.

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5.6 EMERGENCY RESPONSE

- When working at heights and/ or using a fall restraint or fall-arrest system is used, provisions shall be made to enable the safe rescue of a person who falls. These provisions should include:
 - ❖ An effective rescue plan for that site is developed prior to work commencing
 - ❖ Personnel are appropriately trained in height rescue and first aid and - Experienced persons required for rescue.
 - ❖ It is responsibility of contractor to ensure appropriate rescue equipment and trained personnel's available as required in fall protection plan.
- The rescue plan should enable the person to be removed from the suspended position as quickly as possible to prevent the fallen person developing suspension trauma.
- The emergency response plan for the site/yard shall include the credible scenarios like fall from height, elevating work platform rescue, basket rescue, using rescue kit etc. The necessary rescue equipment shall be made available for the same and shall be practiced by mock drills

6 CHECKING, CORRECTIVE AND PREVENTIVE ACTION

There are several different types of inspections. Inspections must be performed by personnel qualified to inspect specific make and model of equipment.

- Inspections performed on an interval of less than a year
 - If manufacturer's instructions require inspections,
 - If out of service for longer than 3 months, or
 - If environmental conditions require inspections
- Annual inspections
- Pre-start inspections performed at the beginning of each shift

All equipment shall be inspected once in six months by Competent Person as per regulatory requirements and certificates/ color code shall be made available along with the equipment

All mechanical equipment shall be verified for their valid certificates along with the operator licenses (If applicable) prior to hiring

7 TRAINING

Training shall be provided to all those are engaged in work at height. Specific training shall be imparted to all those are engaged in

- Working over roofs
- Work over Platforms
- Man lifts/man basket including the operators

A Competent Person will train employees to this procedure who might be exposed to fall hazards. Training will be documented according to Training and Orientation.

Training includes (at least) the following topics:

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- General requirements of this procedure
- Recognition of fall hazards
- Nature of fall hazards
- Correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- Use and operations of guardrail systems, PFAS, safety net systems, warning- line systems, safety monitoring systems, controlled access zones, and other protection used
- Proper anchoring and attachment techniques
- Limitations on use of mechanical equipment during work on low sloped roofs
- Correct procedures for handling and storage of equipment and materials, and the erection of overhead protection
- Role of employees in fall protection work plans
- Safety requirements of the job
- Hazards and its control
- Pre – job inspections
- Concept of work permit
- Usage of PPE
- Reporting of incidents / unsafe conditions
- Rescue considerations / Rescue planning
- Role of each employee in safety monitoring system (when in use)

All personnel who are executing Height works should be given practical training on the same prior to engaging them on work site.

Daily toolboxes talk to be conducted by the line management gang wise to discuss about that day work sequence as per method statement.

8 RECORDS

Project sites shall ensure that documented information generated during the Height Work Management Program implementation are maintained.

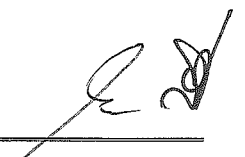
S. No.	Title	Location	Retention period
01	Third party inspection certificate of all equipment (lifting equipment / Tools & Tackles (T&T)/ PFAS)	HSE Department	Till Completion of Project
02	Periodic inspection reports of all equipment (lifting equipment / T&T/ PFAS/ ladder/ scaffold)	HSE Department	Till Completion of Project
03	Operator Competency and trade validation records	HSE Department	Till Completion of Project
04	Operator periodic training	HSE Department	Till Completion of Project

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9 ANNEXURES

Monthly Inspection Checklists:

AMNS/Project/TS/HSEM/10/F01	- Portable ladder Inspection Checklist
AMNS/Project/TS/HSEM/10/F02	- Full Body Harness Inspection Checklist
AMNS/Project/TS/HSEM/10/F03	- Safety Net Inspection Checklist
AMNS/Project/TS/HSEM/10/F04	- Lifeline inspection checklist
AMNS/Project/SOP/HSEM/01/F01	- Man Lift inspection checklist
AMNS/Project/SOP/HSEM/01/F02	- Man Lift daily inspection checklist by Operator
AMNS/Project/TS/HSEM/11/F24	- Man Basket inspection checklist

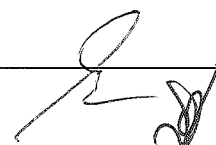


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	PORTABLE LADDER INSPECTION	Rev : 00
		Date: 06-01-2023
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Project Name:		Ladder ID No.:	
Contractor Name:		Inspection Date:	
Ladder Specs.		Next Inspection Date:	

S.No.	ITEM	Acceptable		Comments
		YES	NO	
GENERAL				
1.	Loose steps or rungs (Joints loose if can be moved by hand)			
2.	Loose nails, screws, bolts, or other materials			
3.	Cracked, split, or broken uprights, braces, steps, or rungs			
4.	Slivers on uprights, rungs, or steps			
5.	Rungs/steps missing			
6.	Rungs/steps on metal ladders corrugated or knurled			
7.	Free from grease, oil, or slippery materials			
8.	Wooden parts free from splinters, cracks, decay			
9.	Damaged or worn out non-slip bases			
10.	Rails free from cracks/splitting			
11.	Loose nails/screws			
STEPLADDERS				
12.	Wobbly			
13.	Do not exceed 20 feet in length			
14.	Loose or bent hinge spreaders			
15.	Broken stop on hinge spreaders			
16.	Sharp edges on spreaders			
17.	Loose hinges			
EXTENSION LADDERS				
18.	Loose, broken, or missing extension locks			
19.	Defective locks that do not seat properly when ladder is extended			
20.	Frayed or worn rope			
21.	Single section ladders do not exceed 30 feet in length			
22.	Two-section extension ladders do not exceed 48 feet in length			
23.	Ladders with more than two sections do not exceed 60 feet long			

Stores Representative	Technical Representative	HSE REPRESENTATIVE
Inspected by : _____	Inspected by : _____	Inspected by : _____
Signature : _____	Signature : _____	Signature : _____
Date : _____	Date : _____	Date : _____




AM/NS INDIA	SAFETY INSPECTION CHECKLIST	AMNS/Project/TS/HSEM/04/F02
	FULL BODY SAFETY HARNESS	Rev : 00
		Date: 06-01-2023
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Project Name:		Harness ID No.:	
Contractor Name:		Inspection Date:	
Harness Specs.		Next Inspection Date:	

S.No.	ITEM	YES	NO	Comments
FULL BODY HARNESS				
1.	Is there any damage, distortion, sharp edges, burrs, cracks and corrosion on the D-rings, buckles, keepers and back pads?			
2.	Is there any cuts, burns, tears, abrasions, frays, excessive soiling and discoloration on the webbing?			
3.	Inspect, making certain all labels are securely held in place and are legible.			
4.	Are the stitches in good condition? No pullout/ cuts?			
LANYARD				
5.	Is there any damage, distortion, sharp edges, burrs, cracks and corrosion on the snap hooks, carabineers, adjusters, worn parts, keepers, and thimbles?			
6.	Is there any pulled or cut yarn, burns, abrasions, knots, excessive soiling and discoloration on the synthetic rope?			
7.	Material must be free of frayed strands, chemical, heat damage on the synthetic rope			
8.	Is there any elongation, tears and excessive soiling on the energy absorbing component?			
SNAPHOOKS/ CARABINERS				
9.	Is there any cracks, deformities and locking operations?			
10.	Hook gates must move freely and lock upon closing			
11.	Is there any corrosion, which affects the operation and/or the strength?			

Stores Representative	Technical Representative	HSE REPRESENTATIVE
Inspected by : _____ Signature : _____ Date : _____	Inspected by : _____ Signature : _____ Date : _____	Inspected by : _____ Signature : _____ Date : _____



	SAFETY INSPECTION CHECKLIST SAFETY NET	AMNS/Project/TS/HSEM/04/F03
		Rev : 00
		Date: 06-01-2023
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Project Name:		Safety Net ID No.:	
Contractor Name:		Inspection Date:	
Safety Net Specs.		Next Inspection Date:	

S.No.	ITEM	YES	NO	Comments
1.	Is the safety net label intact and legible?			
2.	Is there any wear, damage and other deterioration?			
3.	Are cuts or fraying of the mesh cord, tie ropes visible?			
4.	Is there any cuts in the strands of the net?			
5.	Is the border rope of the safety net continuous and passing through each mesh around the perimeter?			
6.	Are all the tie ropes available and without any damage?			
7.	Are the both the layers of mesh in good condition?			
8.	Is there any signs of fire burns in the safety net?			
9.	Are there distortions in the line or appearance of the nets or supporting framework?			
10.	Are anchorages/fittings of the safety net intact and good order?			
11.	Is there any stitching damage?			
12.	Is the safety clean of dirt / debris?			
13.	Is there any defects in knot (if knotted mesh)?			
14.	Is there any UV degradation (sun's heat)?			

Stores Representative	Technical Representative	HSE REPRESENTATIVE
Inspected by : _____	Inspected by : _____	Inspected by : _____
Signature : _____	Signature : _____	Signature : _____
Date : _____	Date : _____	Date : _____



AM/NS INDIA	SAFETY INSPECTION CHECKLIST	AMNS/Project/TS/HSEM/04/F04
	LIFELINE	Rev : 00
		Date: 06-01-2023
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Project Name:		Lifeline ID No.:	
Contractor Name:		Inspection Date:	
Lifeline Specs.		Next Inspection Date:	

S.No.	ITEM	YES	NO	Comments
LABEL AND MARKING				
1.	Is label intact and legible?			
2.	Does the lifeline has appropriate OSHA/CE/IS/ANSI marking?			
HARDWARE (BUCKLES & D-RINGS)				
3.	Are the connectors self-closing and locking?			
4.	Is there any corrosion observed?			
5.	Is there any pitting or nicks?			
MATERIAL CABLE OR ROPE				
6.	Is there any Broken / Missing / Loose stitching			
7.	Is the termination (stitch / splice / swage) done properly and intact?			
8.	Is there an excessive wear (fraying or broken stand)?			
9.	Is there Cuts / Burns / Holes?			
10.	Is there Kinks?			
11.	Is there separation or bird caging?			

Stores Representative	Technical Representative	HSE REPRESENTATIVE
Inspected by : _____	Inspected by : _____	Inspected by : _____
Signature : _____	Signature : _____	Signature : _____
Date : _____	Date : _____	Date : _____

